REPORT OF THE

MEDICAL FACILITIES COMMISSION

to

THE GOVERNOR

and

THE GENERAL ASSEMBLY OF VIRGINIA

SD n,1974

COMMONWEALTH OF VIRGINIA
Department of Purchases and Supply
Richmond
1973

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REPORT OF THE MEDICAL FACILITIES COMMISSION TO THE GOVERNOR AND GENERAL ASSEMBLY

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RICHARD MAGRAW, M.D.
HARRY H. MANSBACH
JOHN MARTIN, M.D.
HAROLD B. HALEY, M.D.
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PINSON NEAL, M.D.
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MRS. BET NEALE

CHAPTER 688

An Act to continue the Medical Facilities Commission, to prescribe its members and duties and to appropriate funds.

Whereas, the problems of physician supply and distribution, increasing productivity of the medical schools and improving medical education are long-term problems requiring on-going efforts for their solution; and

Whereas, the University of Virginia Affiliated Hospital Program requires continued planning for further expansion, curricular changes, use of television, computers and other communication technology; and

Whereas, an area health education center in Virginia would be highly beneficial and is a possibility which needs to be explored and developed; and

Whereas, coordination and cooperation between the State's two schools of medicine would be fostered by joint membership on a commission; now, therefore,

Be it enacted by the General Assembly of Virginia:

1. § 1. The Commission established to study the advisability and feasibility of utilizing the medical facilities, resources and professional personnel of Roanoke and other communities in the State as an affiliated operation of the University of Virginia School of Medicine and Medical Center is continued for a period of two years and shall hereafter be known as the Medical Facilities Commission.

§ 2. The Commission shall consist of fourteen members, two to be appointed by the Privileges and Elections Committee of the Senate from the membership thereof, five to be appointed by the Speaker of the House of Delegates from the membership thereof, four to be appointed by the Governor from the State at large, the Director of the State Council of Higher Education or a representative designated by him, the Dean of the School of Medicine of the Medical College of Virginia, Health Sciences Division, Virginia Commonwealth University and the Dean of the School of Medicine of the University of Virginia. The Vice-President for Health Sciences from the University of Virginia and the Vice-President for Health Sciences from Virginia Commonwealth University shall be nonvoting members.

§ 3. The members of the Commission shall receive no compensation for their services but shall be reimbursed for their necessary expenses incurred in the performance of the duties of the Commission.

§ 4. The Commission shall have the following duties:

a) It shall continue studying and planning the development of the University of Virginia Affiliated Hospital Program for undergraduate, graduate, and continuing education programs for family physicians, other medical specialists, and other health professionals.

b) It shall plan for and develop an Area Health Education Center.

c) It shall seek to assure that momentum is sustained toward increasing the number of family and other type physicians in Virginia by encouraging further development of such programs and alerting the General Assembly to the need for additional programs to prevent future health manpower shortages.

d) It shall encourage coordination between the State's two medical schools

and Norfolk Area Medical Authority as they develop affiliations with communities for undergraduate, graduate, and continuing education programs for family physicians, other specialists, and other health professionals.

e) It shall encourage coordination between the two medical schools and Norfolk Area Medical Authority in pilot studies in use of computers, television and transportation modalities.

f) It shall study such other problems related to medical education and health as the General Assembly or the Governor may request.

§ 5. The Commission is authorized to accept and expend funds, gifts and grants from private and public sources, including federal grants or contracts, for the purposes of carrying out its duties.

§ 6. For the purposes of this study, the Commission may employ such technical and other assistance as may be necessary.

§ 7. The Commission shall conclude its activities and report to the Governor and the General Assembly no later than November one, nineteen hundred seventy-three. The Commission shall make an interim report if so requested by the Governor or the General Assembly or if it so desires.

2. For the purposes of this act, there is hereby appropriated from the contingent fund of the General Assembly the sum of twenty thousand dollars.

To: HONORABLE LINWOOD HOLTON, *Governor of Virginia*
and
THE GENERAL ASSEMBLY OF VIRGINIA

The Medical Facilities Commission began its study in December, 1972, pursuant to Chapter 688 of the 1972 Acts of Assembly. The Commission was originally empowered by the 1968 General Assembly to study the utilization of certain medical facilities as an affiliated operation of the University of Virginia School of Medicine (Appendix 1). The 1970 session of the General Assembly extended the Commission for another two years (Appendix 2), and in 1972, the Commission study was again extended for two years with an expanded charge and a new name, the Medical Facilities Commission. Its charges were:

A. It shall continue studying and planning the development of the University of Virginia affiliated hospital program for undergraduate, graduate, and continuing education programs for family physicians, other medical specialists and other health professionals.

B. It shall plan for and develop an Area Health Education Center.

C. It shall seek to assure that momentum is sustained towards encouraging the number of family and other type physicians in Virginia by encouraging further development of such programs and alerting the General Assembly to the need for additional programs to prevent future health manpower shortages.

D. It shall encourage coordination between the State's two medical schools and the Norfolk Area Medical Authority as they develop affiliations with communities for undergraduate, graduate, and continuing education programs for family physicians, other specialists, and other health professionals.

E. It shall encourage coordination between the two medical schools and the Norfolk Area Medical Authority in pilot studies in the use of computers, television and transportation modalities.

F. It shall study other problems related to medical education and health as the General Assembly or the Governor may request.

In order to carry out these charges most effectively, a number of consultants were asked to assist the Commission on a regular basis. These consultants included the Dean of the Eastern Virginia Medical School, the President of the Norfolk Area Medical Center Authority, the President-Elect of the Medical Society of Virginia, and many other physicians throughout the State. The Commission wishes to express its thanks for the many hours these consultants devoted to its deliberations.

At its initial meeting, the Commission decided that the best approach to organizing its charges would be to try to find solutions to the major problems of health manpower in Virginia and relate these solutions to the affiliated program in Roanoke and to the State as a whole. It was agreed that the chief problems were as follows:

1. The need to increase the *number* of medical school graduates and physicians in Virginia between 1973 and 1980 and beyond.

2. The need to increase the *retention* of graduating physicians in Virginia and attract graduate physicians from other areas to Virginia.

3. The need to improve and insure adequate *distribution* of physicians in Virginia.

Throughout the rest of the year, the Commission focused its attention on these problems and their possible solutions.

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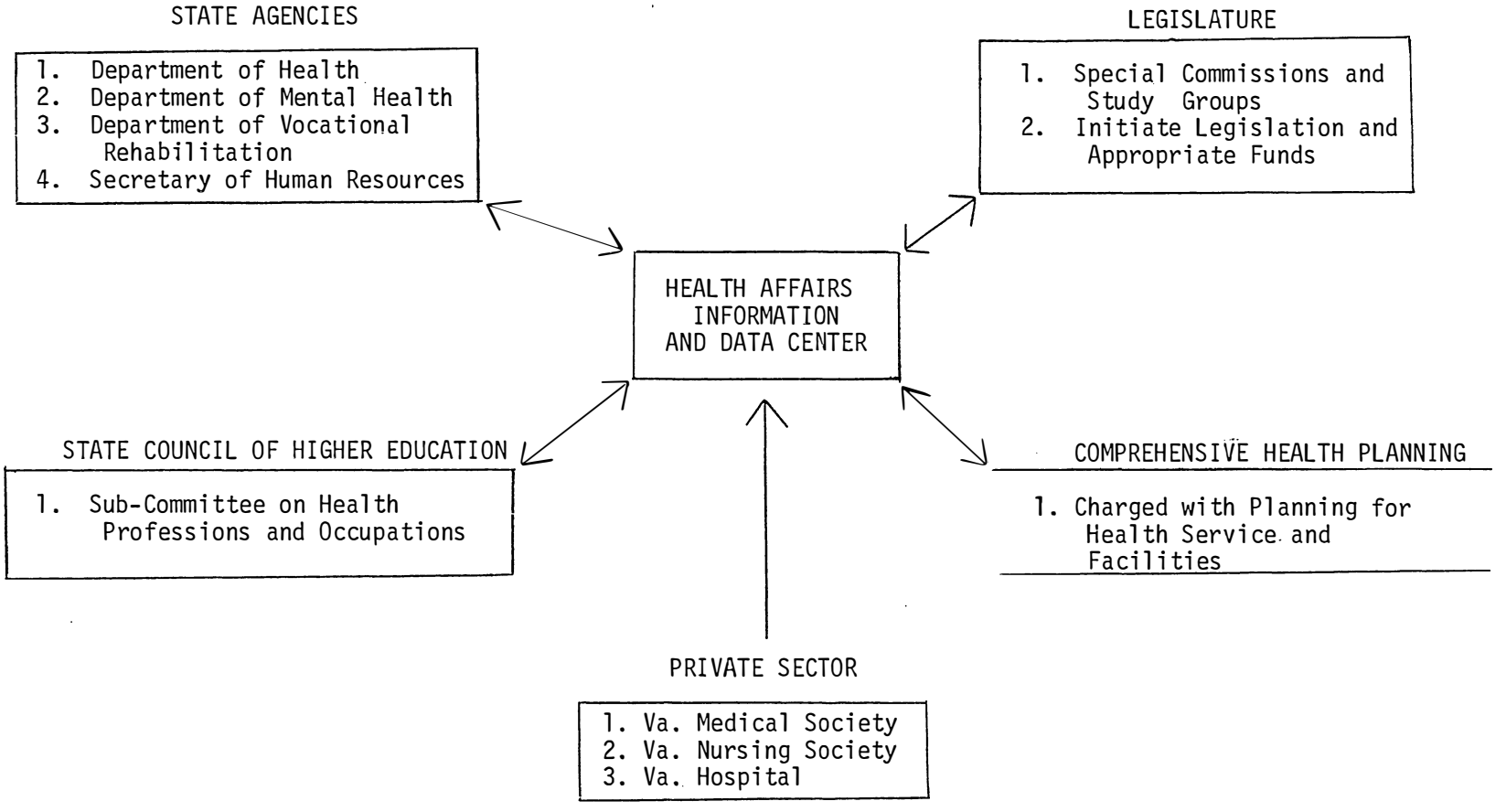
A glaring lack of data regarding medical manpower needs and resources was evident from the first meeting of the Commission. The true extent of physician, nursing, dental, and other allied health personnel supply is not known, nor is there accurate information on the true need for and distribution of these personnel throughout the State. The Commission therefore recommended that $50,000.00 be appropriated by the General Assembly to the State Council of Higher Education to initiate an ongoing study of health manpower and appointed a committee composed of Daniel Marvin. William Drucker, Joseph Yon, Fitzhugh Mayo, Richard McGraw, Kenneth Crispell, Lauren Woods, and Warren Pearse to assist the Council in setting up the study. Requested funds were appropriated by the special session of the General Assembly in early 1973, and an additional $25,000.00 was provided by the Board of Community Colleges. A full-time director, John M. Leyes, PhD. has been appointed to direct the study which is now well underway (Appendix 3, A & B). The Commission strongly recommends that this health manpower study be continued by the State Council of Higher Education and that $104,960.00 be appropriated by the General Assembly for the 1974-1976 biennium for this purpose. Data to be obtained in this study are essential to carry out the recommendations of the Commission to follow.

The best current data about physician distribution and future requirements are those supplied by Fitzhugh Mayo and Kenneth Blaylock and were used by the Commission in its deliberations (Appendix 4 & 5).

It was also recognized early in the deliberations of the Commission that while there are and have been many groups studying health manpower and health matters in Virginia, there is much overlapping and reduplication of effort and much data is unused because of lack of availability. There is no one place where legislators, health educators, health planners, State agencies, and the interested public can go to obtain information on existing and proposed health programs. The Commission therefore established a committee composed of Kenneth Crispell, Chairman; Lauren Woods, Peter Babalas, Warren Davis, Earl Dickinson, Charles Gunn, Donald Pendleton, Warren White, and Harry Mansbach to study this particular problem and recommend possible solutions. The committee has made three major recommendations:

1. There should be established in the Commonwealth a Health Affairs Information and Data Center, whose function should be to collate and make available pertinent information about health matters in the Commonwealth. It would not duplicate the functions of existing programs or agencies. Its staff should consist of a Director, Deputy Director, and necessary technical personnel (computer scientist, etc.) plus an information officer from various existing State and private agencies (see diagram). These information officers should be located in the Center, reporting to the Director thereof significant information from their respective agencies, councils, or committees. The Director of the Center would report to the Secretary of Human Resources or to the Chairman of the Subcommittee on Health of the House Committee on Health, Welfare and Institutions, (see below) and would be assisted by an Executive Board consisting of the Directors or Chairmen of the groups involved. The effectiveness of the Center should be evaluated over a three year period.


STATE AGENCIES
1. Department of Health
2. Department of Mental Health
3. Department of Vocational Rehabilitation
4. Secretary of Human Resources
LEGISLATURE
1. Special Commissions and Study Groups
2. Initiate Legislation and Appropriate Funds
HEALTH AFFAIRS INFORMATION AND DATA CENTER
STATE COUNCIL OF HIGHER EDUCATION
1. Sub-Committee on Health Professions and Occupations
COMPREHENSIVE HEALTH PLANNING
1. Charged with Planning for Health Service and Facilities
PRIVATE SECTOR
1. Va. Medical Society
2. Va. Nursing Society
3. Va. Hospital

2. There should be established in the General Assembly a permanent committee or subcommittee on health. The Medical Facilities Commission specifically recommends that the House Committee on Health, Welfare and Institutions designate a permanent Subcommittee on Health, and further, that this Subcommittee be provided a full-time staff adequate to assist committee members in their decisions about health affairs in Virginia. To this end the Medical Facilities Commission assisted in the preparation of a grant application to the Johnson Foundation to obtain assistance in funding full-time staff members for a subcommittee on health (Appendix 6) under the Model Committee Staff Program in Health conducted by the Citizens Council on State Legislatures (Appendix 7). A definite answer to the application has not as yet been received.

3. The General Assembly should authorize a Health Affairs Advisory Committee to serve in an advisory capacity in the establishment of the Health Affairs Information and Data Center and assist in the formulation of methods to best utilize the data obtained and recorded and to evaluate the effectiveness of the center. This committee should be composed of the present members of the Medical Facilities Commission and also the Dean of the Eastern Virginia Medical School, and the President of the Norfolk Area Medical Center Authority.

The Medical Facilities Commission believes that the establishment of a Health Affairs Information and Data Center, an advisory and evaluating committee, and a full-time health subcommittee, with permanent, full-time staff, in the House of Delegates, would immeasurably improve the efficiency and effectiveness of health education and delivery in the Commonwealth.

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The Medical Facilities Commission designated a committee to investigate methods of increasing the number of family and other physicians in the state, and ways of coordinating the activities of the three medical schools in the State as they develop affiliations with community hospitals for undergraduate and graduate medical and paramedical training programs. The report of this committee, consisting of Warren Pearse, Chairman; William Drucker, Robert Manning, and Daniel Marvin, is attached (Appendix 5).

It is apparent from this report that the number of graduates from Virginia medical schools is increasing to a number almost adequate to meet the expected needs of the state by 1978 (318 expected graduates in that year and a calculated goal or need of 336). The committee study also indicated that more than 85% of Virginia medical school students were residents of the Commonwealth.

More pressing problems than numbers of graduates were those of retention and distribution of medical school graduates. It has been shown that the location of graduate medical or residency training is the most important single factor in determining the location of practice. This has already been amply demonstrated by the University of Virginia Affiliated Hospital Program in Roanoke where 63 of 70 graduates have established practice within 75 miles of Roanoke, in areas of southwestern Virginia where a serious physician shortage exists. The study of primary physician manpower by Mayo (Appendix 4) indicated a need to train and start into practice 111 primary physicians annually (family physicians, internists, and pediatricians) in Virginia, and the committee recommends that of the total number of graduate medical positions available per year of training, 111 or 50% of the total, whichever is greater, be devoted to the primary care specialities. There are at present 79 such existing residency positions, indicating a minimum *present* need of 32 positions. Total residency positions should be increased, by 1978 or before, to a minimum of 336 per year, adequate to accommodate all graduates of Virginia medical schools.

The committee recommended that the three medical schools in the State, in cooperation with community hospitals and the State Council of Higher Education, should assume corporate leadership and responsibility for developing appropriate (i.e., needed) approved graduate medical opportunities in the Commonwealth. This means that the State medical schools, community hospitals and Council of Higher Education, would, in *response to changing needs in the State*, develop *appropriate, needed* residency programs. It is felt that tailoring residency position availability to changing needs will result in the training of needed types of doctors and avoid the present surplus of some specialists and scarcity of others.

The committee recommended *direct State support* of graduate medical positions in primary medical care (111 positions or 50% of the total per year). Support should be full base stipend plus educational costs of the supporting health education unit. It is further recommended that graduate medical positions in psychiatry should be coordinated between the medical schools and the Department of Mental Health and Mental Retardation with support being provided 75% by the Department and 25% by the medical schools.

The final recommendations of this committee are as follows:

1. All health manpower studies such as the several VALC's, the Virginia Board of Medicine, and the Medical Society of Virginia should be coordinated under the State Council of Higher Education Manpower Study.

2. The State Council of Higher Education Manpower Study should complete its first phase before attempts at identification of needed community resources are made.

3. The three medical educational institutions in the State, in cooperation with community hospitals and the State Council of Higher Education, should assume corporate leadership and responsibility for developing appropriate approved graduate medical opportunities in the Commonwealth.

4. There should be adequate graduate medical education positions in Virginia to at least accommodate graduates from Virginia's medical schools.

5. A minimum or 111 graduate medical positions per year, or 50% of the total positions per year of training, whichever is larger, should be provided in primary physician fields (family practice, internal medicine, pediatrics). There are presently 79 such positions available.

6. Direct State appropriations should support these primary physician graduate medical education positions, including the existing family practice programs, at maximum proposed levels, plus additional positions in other primary care fields at three years for each position. Support should be full base stipend plus educational costs to the supporting health education unit.

7. Graduate medical education positions in psychiatry should be coordinated between the medical schools and the Department of Mental Health and Mental Retardation. Support should be provided 75% by the Department and 25% by the sponsoring school.

The Medical Facilities Commission fully supports these recommendations as workable solutions to the problems of medical manpower, medical graduate retention, and physician distribution. *The Commonwealth must increase slightly its number of medical school graduates, increase the overall available number of graduate medical positions, and in particular, increase the number of residency positions available in primary care specialities. Other changes in numbers and types of residency positions should be responsive to state needs and controlled by coordinated efforts between the medical schools and*

community hospitals. State funds should support graduate medical training programs for primary care physicians.

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The Commission studied throughout the year the activities of the University of Virginia School of Medicine affiliated hospital programs in Roanoke, Lynchburg, and Winchester. Reports to the Commission on these programs are submitted as Appendices 8, 9, 10 and 11. The affiliated hospital program in Roanoke, in particular, has been extremely successful both in utilizing affiliated hospital facilities to increase the teaching capability of the University of Virginia School of Medicine, and in training graduate students who will ultimately practice in the southwest Virginia area (63 of 70 graduates practice in Southwestern Virginia within 75 miles of Roanoke). Since the program was initiated in 1971, the number of family practice residents in training has grown to 33, and will increase to 42 in 1974. The program at Lynchburg may add another 12-18 residencies in family practice in 1974.

The Commission strongly recommends continued budgetary support for the optimal development of the University of Virginia affiliated hospital programs in Roanoke, Lynchburg, and Winchester. Recognizing the regional character of such programs and that they devolve directly to the benefit of the people in the above named communities and recognizing further that the Medical College of Virginia and the Norfolk Area Medical Center Authority have each mounted similar programs providing similar benefits to other regions of the state, the Commission also strongly recommends that these programs in graduate medical education be likewise supported. In this regard, the Commission further recommends continuing support of residency training programs in family practice in these and other areas.

The initial charge to the Commission stated that it should plan for and develop an Area Health Education Center at Roanoke. Such an application was made to appropriate federal agencies without success. It is felt however that the program in Roanoke will eventually function as an area health education center and be extremely influential in developing allied health educational programs in the area.

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The final charge to the commission was to encourage coordination between the two medical schools and NAMCA in pilot studies in the use of computers, television, and transportation modalities. Initially, a committee composed of Jason McClellan, Chairman; Russell Davis, Pinson Neal, and Harold Haley was established to study the problem. During the year, it became evident that the larger problem of continuing post-graduate education for physicians should be further studied because of the imminence of national peer review through the Professional Standards Review Organization Amendments to the Social Security Act, and the likelihood that demonstration of continuing education would become a requirement of medical society membership or state licensure in Virginia. Therefore, a second committee composed of Robert Manning, Chairman; Pinson Neal, and James Craig, was established to recommend a Commission position on continuing post-graduate medical education. Loren Williams and David Walthall served as consultants to these committees. The detailed committee report is attached as Appendix 12. The committee recommendations, strongly supported by the Medical Facilities Commission, are as follows:

1. A conjoint committee be established composed of the Medical Society of Virginia, the three medical schools, the Virginia Council of Higher Education, the State Board of Medicine, and other professional societies to:

a. coordinate statewide planning and implementation of continuing education for physicians.

b. recommend to the Legislature and to its constituency through appropriate channels on matters of fiscal and legislative support in areas of program development, implementation, and accountability.

2. The three medical schools in cooporation with practicing physicians should develop coordinated regional plans for continuing education.

3. The direct costs of any program should be paid for by the physician recipients and/or their societies. Indirect costs should be born by legislative appropriations to the institutions as recommended by the conjoint committee to the Legislature.

While recognizing the availability and efficacy of various educational aids to continuing medical education, the Commission believes that a coordinated statewide program for post-graduate medical education must precede specific requests for "hardware", computer and TV networks, and other educational modalities.

SUMMARY OF RECOMMENDATIONS AND SUGGESTIONS FOR LEGISLATION

In order for the Commonwealth of Virginia to insure adequate numbers of medical school graduates and physicians, appropriate retention of Virginia trained physicians, adequate distribution of physicians in Virginia and to attract physicians from other areas, the Medical Facilities Commission makes the following recommendations and suggestions for legislative action:

1. The current health manpower study of the State Council of Higher Education should be supported for the 1974-76 biennium at a minimum level of $104,960.00 for this period and its activity should be continued indefinitely as part of an ongoing evaluation of Virginia's health manpower needs and resources.

2. There should be established a Health Affairs Information and Data Center to collate and make available all pertinent information about health matters, much of which is now unavailable and unused.

3. There should be established a Health Affairs Advisory Committee composed of the present members of the Medical Facilities Commission and the Dean of the Eastern Virginia Medical School and the President of the Norfolk Area Medical Center Authority, to assist in the formation of the Data Center and to assure its adequate utilization and evaluation.

4. There should be established a permanent Subcommittee on Health of the House Committee on Health, Welfare, and Institutions, with full-time staff, to assist legislators and State officials in health related decisions.

5. The number of appropriate graduate medical positions available in the Commonwealth should be increased at least to the extent necessary to accommodate all graduates of Virginia medical schools. 50% (or at least 111 per year) of these positions should be in the fields of primary care (family practice, internal medicine, and pediatrics). The *need* for various types of graduate medical programs should determine available positions and coordinated medical school and community hospital efforts should guarantee the availability of such positions.

6. The Commonwealth should provide direct support of graduate medical training for primary care physicians.

7. The optimal development of the affiliated hospital programs of the University of Virginia School of Medicine in Roanoke, Lynchburg, and Winchester and the affiliated graduate medical education programs of the Medical College of Virginia and the Eastern Virginia Medical School should be encouraged and supported as necessary.

8. Coordinated efforts between the three medical schools of Virginia, the Medical Society of Virginia, the State Council of Higher Education and the State Board of Medicine should be encouraged to provide organized regional plans for continuing education of physicians.

APPENDICES

1. Report of the Commission on the Affiliated Medical School Program to Increase Health Manpower, 1968
2. Report of the Commission on the Affiliated Medical School Program to Increase Health Manpower, 1970
3. A. Draft of Manpower Study of the State Council of Higher Education
   B. Report of the Manpower Study of the State Council of Higher Education

   Primary Physician Manpower in Virginia, 1972; Present Supply and Future Needs, Fitzhugh Mayo, M.D.

   Report of the Committee on Graduate Medical Education

   Grant Application to the Citizen's Council on State Legislatures

   Statement of Citizens Council on State Legislatures

   Report of the Affiliated Hospital Program of the University of Virginia at Roanoke

   Report of the Affiliated Hospital Program of the University of Virginia at Roanoke (Haley)

   Review of the University of Virginia Affiliated Hospital Program at Lynchburg

   Review of the Affiliated Hospital Program of the University of Virginia at Winchester

   Committee Report on Continuing Education and Educational Aids

13. Recommended Legislation

APPENDIX 1

Report of the Commission on the Affiliated Medical School Program to Increase Health Manpower, 1968.

AFFILIATED MEDICAL SCHOOL PROGRAM TO INCREASE HEALTH MANPOWER

REPORT OF

THE COMMISSION TO STUDY THE ADVISABILITY AND FEASIBILITY OF UTILIZING CERTAIN MEDICAL FACILITIES AS AN AFFILIATED OPERATION OF THE UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE

To: HONORABLE MILLS E. GODWIN, JR., *Governor of Virginia*
and
THE GENERAL ASSEMBLY OF VIRGINIA

The 1968 General Assembly of Virginia enacted Chapter 547, Acts of Assembly 1968, "to create a commission to study the advisability and feasibility of using certain medical facilities in Virginia for clinical instruction of medical students and for training of students in allied health fields." This Act reads as follows:

Whereas, health manpower needs in this State and nationally are not being met adequately; and

Whereas, a great portion of the extremely high cost of a medical education is related to the basic science education of medical students in their first two years; and

Whereas, both State-supported medical schools are currently expanding their basic science capabilities considerably in terms of facilities and personnel as well as educational and research functions; and

Whereas, Norfolk continues to work toward an independent medical school which will enhance medical education and high quality medical care in the Tidewater area; and

Whereas, the western area does not have appropriate clinical training affiliations to fully utilize its medical resources and facilities; and

Whereas, Roanoke is the major population, industrial, and medical center for western Virginia having two major community-type hospitals with a major veterans hospital within a short distance; and

Whereas, it would seem desirable to further exploit these resources and to involve them in the health education potential of our State as well as to further utilize these facilities as a clinical center for the area; and

Whereas, such a development could have a great impact upon health training and medical care in our State at minimal cost; now, therefore,

Be it enacted by the General Assembly of Virginia:

§ 1. There is hereby created a Commission to study the advisability and feasibility of utilizing the medical facilities, resources and professional personnel of Roanoke and other communities in the western part of the State as an affiliated operation of the University of Virginia directed toward participation in the education of medical students in their clinical years, post graduate, residency training and continuing education, as well as training in the allied health professions.

§ 2. The Commission shall consist of eleven members; two of whom shall be appointed by the President of the Senate from the membership thereof; three of whom shall be appointed by the Speaker of the House of Delegates from the membership thereof; and six of whom shall be appointed by the Governor from the State at large. The members of the Commission shall receive no compensation for their services, but may be reimbursed for their necessary expenses incurred in attendance upon meetings of the Commission. The Commission may employ such consultant and secretarial services as may be necessary in the conduct of the study.

§ 3. The Commission shall complete its study and make its report to the Governor and the General Assembly of Virginia not later than November one, nineteen hundred sixty-nine. The Commission, from time to time and prior to such date, may submit such interim reports and recommendations to the Governor as it may deem expedient.

§ 4. The Commission is authorized to accept and expend funds, gifts, and grants from private and public sources, including federal grants or contracts, for the purpose of carrying out its study.

Pursuant to this Act, members of the Commission were appointed, who were: Honorable Willis M. Anderson, Roanoke; Dr. K. R. Crispell, Charlottesville; Dr. Charles L. Crockett, Jr., Roanoke; Honorable Russell L. Davis, Rocky Mount; William H. Flannagan, Roanoke; Honorable Kossen Gregory, Roanoke; Senator William B. Hopkins, Roanoke; Honorable Joseph P. Johnson, Jr., Abingdon; Senator J. Harry Michael, Jr., Charlottesville; Frederic W. Scott, North Garden; and John W. Williams, Charlottesville.

The first meeting of the Commission was held at the Roanoke Memorial Rehabilitation Center, August 7, 1968, at which Dr. Crockett was elected Chairman and Mr. Flannagan, Vice-Chairman. Subsequent meetings were held in Roanoke, Charlottesville and Richmond. A public hearing was also held in Roanoke. The Division of Statutory Research and Drafting acted as secretary to this Commission, Frank R. Dunham, representing it.

The Commission approached its assigned task by studying physician manpower needs nationally and in Virginia; the current status and future plans for student enrollment at the State's two medical schools; mechanisms for increasing the enrollment at the University of Virginia School of Medicine through affiliations with the Roanoke medical community; the criteria and sanctions necessary for such affiliations; the objectives of, and various benefits from, such affiliations; the nature and experience of affiliated programs in other states; and cost projections for the alternative of a completely new medical school fully financed by the State. From these studies the Commission reached its conclusions resulting in certain recommendations for action by the General Assembly and the University of Virginia School of Medicine.

RECOMMENDATIONS

As a result of its study, this Commission recommends:

(1) Affiliated programs between the University of Virginia School of Medicine and Medical Center and certain other medical communities to increase health manpower and achieve other objectives are highly desirable and feasible, and further development and expansion of such programs should be undertaken immediately.

(2) The University of Virginia School of Medicine should be provided faculty and administrative budgetary support in the coming biennium for the continued development and implementation of affiliated programs already initiated in Roanoke and Winchester.

(3) More detailed planning for necessary curriculum changes, the inclusion of other communities, housing, communications, and other logistical problems related to affiliated programs should be specifically studied and planned by this Commission during the next biennium. As a result this study should be continued and expert knowledge and assistance should be obtained at a cost not to exceed $50,000.

(4) The University of Virginia School of Medicine and Medical Center should plan continually for future health manpower needs in the State and their role in fulfilling these needs.

PURPOSE OF THE STUDY

There is general agreement that physician and other health professional manpower needs are not being met adequately in the nation or in Virginia. It is further recognized that the education of physicians is extremely time-consuming, expensive and complex, in that it involves programs in undergraduate education, basic science and clinical medical education, hospital graduate education and training, and continuing education. It has been the charge and purpose of this Commission to study the advisability and feasibility of economically increasing the physician output of the University of Virginia School of Medicine, one of the State's two medical schools, through affiliations with, and utilization of, certain existing medical facilities in Virginia in programs of medical education of high quality.

HEALTH MANPOWER AND PHYSICIAN NEEDS

The National Advisory Commission on Health Manpower in its report of November, 1967, stated "Present trends indicate that in the coming decade the growth of health services will far outpace the growth of population. At the same time the 'physician shortage' will in all probability continue to worsen." [1] This Commission further pointed out that most reports on health manpower have estimated the adequacy of future health care on the basis of predicted ratio of physicians to population, but the shortcomings of this approach are apparent when one considers the vast increase in *demand* for *health services.* Thus, from 1955 to 1965 although the population increased 17%, and the number of active physicians increased 22%, including a 12% increase in physicians in private practice, there was a rise of *81%*, in "physician directed" *services* and an increase in hospital services of *65%*, and it was predicted that this rapid expansion of health services could be expected to continue through 1975. To quote further, "The Commission believes that there is currently a shortage of physicians and that this shortage will worsen in relation to growing demand, despite the expected increase in the supply of physicians in the years ahead." [1]

In 1966 the Board of Trustees of the American Medical Association appointed a Committee on Health Manpower which reported in June of 1967 an increasingly "critical need for more physicians, for better distribution of physician resources and allied health personnel in all categories" and recommended expansion of existing medical schools as well as new institutions. Subsequently, a joint statement on health manpower was issued March 5, 1968, by the American Medical Association (A.M.A.) and the Association of American Medical Colleges (A.A.M.C.) in which the two emphasized "the urgent and critical need for more physicians" and declared "both Associations endorse the position that all medical schools should now accept as a goal expansion of their collective enrollments to a level that permits all qualified applicants to be admitted." The statement called for curricular innovations and "other changes in the educational programs which would shorten the time required for medical education and minimize the cost." [2]

The Association of American Medical Colleges in October, 1967, authorized a curriculum study which included a comprehensive survey of all American medical schools, and a five-day workshop, culminating in recommendations to the Executive Council and membership of the A.A.M.C. at its meeting in November, 1968, which received the enthusiastic endorsement of this organization. (See Appendix A).

The Health Manpower Commission recommended: (1) "The United States should produce a sufficient number of physicians to meet its needs; and further, it should assist other countries, particularly developing nations, to improve their systems of medical education and their levels of medical practice and public health. (2) The production of physicians should be increased beyond the presently planned levels by a substantial expansion in the capacity of existing medical schools, and by continued development of new schools. (3) Federal funds in support of capital or operating costs of education should be provided to a medical school in such a way that they create economic incentives for the schools to expand enrollment while improving its quality. Such incentives should be based on increases in the absolute numbers of medical students." [1]

From the data obtained, it is indicated that our permanent supply of physicians is presently augmented at the rate of 1,400 a year by foreign medical graduates who become licensed to practice, which is approximately *17% of our new licentiates;* and the total of foreign medical graduates, at the time of the report, was over 40,000, comprising some *14% of the active physicians in this country.*

PHYSICIAN SUPPLY IN VIRGINIA

The preceding information seems relevant since there is a considerable flow of health personnel from area to area in the United States, and obviously the total national picture has a considerable bearing on supply and demand and events in Virginia. Certainly with its sound economy, demand for health services in the State per capita should be at least as high as the national average, and *therefore the provision of such services is a necessary goal.*

Information concerning the supply of physicians in Virginia [5] comes from a recent study supported in part by a contract from the Office of Comprehensive Health Planning of the State Department of Health. For 1967 the study found 4,811 active physicians in Virginia representing about *104.5 physicians per 100,000 population.* This compares to the national average of 132 physicians per 100,000 and only 19 of the 50 states have fewer active physicians per 100,000.

According to the same study only 25% of the actively practicing physicians in the State are general practitioners, and among these there are more older physicians than the current rate of new physicians entering general practice in the State. Over 25% of the current supply of general practitioners will reach age 65 by 1972. This study further confirms the already generally accepted opinion that the rural areas are losing physicians at a faster rate than urban areas.

It is very difficult to make completely accurate projections concerning the needed supply of physicians for the next decade due to unknown demands for health services, the impact of such programs as Medicare and Medicaid, and the ever-increasing complexity of medical care with advancing technology. During the twenty years from 1945 to 1965 there were 128,782 graduates of medical schools in the United States.[6] During the same twenty-year period there were 1,281 graduates from the University of Virginia School of Medicine and 1,748 from the Medical College of Virginia, making a total of 3,028, slightly

less than 3% of the national total. However, during this twenty-year period, the number of graduates over the country has been increasing steadily with new schools and expanded facilities at existing schools, but there was no major expansion of basic science building facilities or the number of graduates from the two Virginia schools. It is estimated that the United States population will grow to 230,000,000 by 1975 with approximately 3% in the State of Virginia. Therefore, Virginia should produce at least 3% of the country's physician graduates annually, which it is now estimated will be between 11,000 and 12,000 by that time. During the past decade, 20.6% of our annual supply of new physicians in the State of Virginia has been supplied by graduates of foreign medical schools.[5] If, as suggested by the Health Manpower Commission, there is a cessation of this drain of foreign medical graduates from their own needy countires, a reduction in the flow of new physicians locating for practice in Virginia would result, and since our physician: population ratio is already 20% below the national average, *a minimum goal of 350 to 400 physician graduates per year* by 1975 will be needed to keep pace with Virginia's needs.

The projected plans of the State's two existing medical schools are that the Medical College of Virginia plans to accept 136 students in its *entering* classes beginning 1970 [7] and with the completion of its long-awaited new basic science building, the University of Virginia School of Medicine hopes to accept a minimum of 114 medical students in its *entering* class of September, 1971, with the contingency that some additional resources for some parts of clinical training might be needed at affiliated institutions.[8] Thus, according to present plans the combined *entering* class of the two schools in 1971 would be 250, which with minimal attrition figures hopefully would result in *240* graduating physicians in 1975, a number obviously below the projected needs as indicated above.

To alleviate these needs, it is hoped to enter 168 students at the Medical College of Virginia in 1975, contingent upon the availability of additional resources.[7] The University of Virginia hopes to admit a minimum of 130 students by 1973, and quite possibly more by 1975, depending upon the availability of new facilities for ambulatory care and the availability of affiliated institutions.[8]

The State Council of Higher Education in 1964 [9] stated "Virginia is maintaining its supply of physicians by relying on outside sources at a time when a population growth, existing shortages, and increased demand for medical care make it imperative that more physicians be graduated within the State." (See Appendix C)

The changing population trends, demands for health services, increasing complexity of medical care, constantly increasing health manpower and medical facility needs, curriculum needs, and the long twenty-year gap without medical school expansion in the State all indicate that the medical schools and other appropriate bodies should be encouraged in on-going planning for health needs.

INCREASING PHYSICIAN SUPPLY IN VIRGINIA

The above data would seem to indicate that there is a pressing need to sharply increase the number of physicians graduating from medical schools nationally and in Virginia as rapidly as possible. This Commission was created to study the advisability and feasibility of utilizing certain existing medical facilities in an affiliated program with the University of Virginia School of Medicine as one means of economically increasing the number of physicians that could be graduated from that institution, one of the State's two existing medical schools.

Presently, by tradition medical schools have had two major divisions: (A) the basic science division, and (B) the clinical division.

(A) The basic science division includes the Departments of Anatomy, Biochemistry, Physiology, Pharmacology, Pathology, Microbiology, and Laboratory Medicine for the instruction of medical students and graduate students. Such departments require considerable capital outlay for the rather extensive and complex educational and laboratory facilities necessary for teaching and research. They are usually in separate geographic areas connected to clinical departments of a school of medicine. Medical students in the past have customarily spent their first two years in the basic sciences, and their final two years in clinical training. Recent changes in many medical schools have seen curriculums become more flexible so that the time devoted to basic science instruction has been reduced for many but not necessarily all students.

(B) The clinical division of a medical school includes the various departments of clinical medicine in the associated and affiliated hospitals related to a particular school of medicine. Included in the function of such departments are the clinical care of ambulatory out-patients, hospitalized patients, the clinical education and training of medical students, the graduate education and training of interns and residents, research in clinical problems of medicine, and, more recently, the study of improved methods of the provision of health care to the citizenry. This portion of the medical student's training in today's medical curriculum might be considered to occupy one-half to two-thirds of his over-all program.

In looking ahead to physician manpower needs in our State, the University of Virginia School of Medicine began planning for expansion in 1960. To accomplish any major expansion, a new medical education building for the basic science division was necessary. Planning funds were appropriated by the General Assembly in 1964 and capital outlay funds by the 1966 General Assembly. Delays in availability of federal funding and spiraling costs delayed the start of construction until March, 1969, with completion expected in September, 1971. At that time expansion of the school's entering class will be possible. Initial planning called for expansion to 104, but the school has already further extended these plans to accept 114.[8]

Referring to the November, 1968, recommendations adopted by the Association of American Medical Colleges, the first listed recommendation seems particularly pertinent to this Study. "Medical schools must increase their output of physicians. All schools should immediately increase the number of entering students, accelerating expansion by *redistributing* temporarily the *use of existing resources*. Only by increasing the number of students beginning the study of Medicine will there be a major and continuing increase in the number of physicians in practice. It is too late to depend on presently planned expansion and the development of new medical schools for an acceptable increase in the number of physicians entering the community during the next ten years. Only an *increase* in the program of planned *output* of *existing* and developing *medical schools* can increase the supply of physicians in the next decade."

This Commission finds that, in line with the aforementioned recommendation of the A.A.M.C. and recent curricular changes, the new medical education building, when completed at the University of Virginia School of Medicine, will provide physical facilities that would quite adequately permit the school to further expand its entering classes of medical students well beyond the initially planned 104. Such further expansion would need to be contingent upon two additional resources:

(1) Any increase in numbers of students would naturally require funding for appropriate faculty increases.

(2) The expansion to 104 entering students was projected on the basis of the currently existing clinical facilities and patient resources at the University of Virginia Medical Center. The latter has not changed appreciably in recent years, although long-range planning continues for clinical facilities' expansion and their form, function and magnitude. Therefore, for any *immediate* expansion of class size beyond 104 it would appear that additional *affiliated clinical* facilities would be most advantageous, if not absolutely necessary. If such were successfully accomplished, it then could have a bearing on the type and function of future clinical facilities' expansion at the University of Virginia Medical Center. For example, further planning might indicate that some highly specialized care facility might better serve the referral and consultative needs of the citizenry than a next major addition to provide for more general hospital beds of the usual type. Such a concept, of course, touches on the all important role of regional and Statewide comprehensive health planning.

In considering the location of clinical facilities that might be utilized in such an affiliation, this Commission was directed "to study the advisability and feasibility of utilizing the medical facilities, resources, and professional personnel of Roanoke and other communities in the western part of the State as an affiliated operation of the University of Virginia."

EXISTING AFFILIATIONS BETWEEN THE UNIVERSITY OF VIRGINIA AND ROANOKE:

There has been a very successful affiliated residency training program in Orthopedics between the University of Virginia Medical Center and the Roanoke Memorial Hospital since 1958, and, in 1967, similar affiliations were developed by the departments of General Surgery and Urology, which also included the Veterans Hospital. In 1968 a similar affiliated program for the training of residents in Otolaryngology was initiated. Since 1967, discussions have also been under way between the departments of Pediatrics, Obstetrics, Community Medicine, and others. The Department of Neurology at the University of Virginia Medical Center has conducted a special Neurology and Seizure Clinic in Roanoke for several years and a new Congenital Heart Disease Clinic will be started at the Roanoke Memorial Hospital in November, 1969, under the direction of Dr. Martha Carpenter, Associate Professor of Pediatrics and Director of Pediatric Cardiology at the University of Virginia Medical Center. Medical students, in small numbers, have been serving clinical clerkships and externships in Roanoke since 1967. Several Roanoke physicians have faculty appointments at the University of Virginia School of Medicine. (See Appendix D)

GEOGRAPHIC PROXIMITY AND LOGISTICS:

Roanoke is approximately 110 miles from Charlottesville and, with the completion of portions of Interstate 64 now under construction, the travel time by car will be no more than two hours. There are also direct travel connections by train, bus and commercial airline. Experience with the already existing affiliated programs has indicated that this time and distance are very definitely within the realm of functional practicality. For the development of affiliated programs on a much larger scale, however, problems of student housing, transportation of students and faculty and communication linkage between the University of Virginia and affiliated institutions, should be studied and planned for in greater detail.

POTENTIAL MEDICAL RESOURCES IN ROANOKE FOR AFFILIATED EDUCATIONAL PROGRAMS:

Some of the factors prerequisite to the utilization of affiliated hospitals by the University of Virginia School of Medicine for medical education and

training are their size, proper accreditation, numbers and types of patient flow, and cooperation of the medical staff, administrative and governing body. The prior existence of intern and residency training programs and an active interest in staff educational programs would also be highly desirable.

The two large, voluntary, community-type hospitals in Roanoke which are located within a mile of each other, and the Veterans Hospital fulfill these criteria. The Roanoke Memorial Hospital, currently having 500 beds, will have 725 beds by 1970. The new Community Hospital of Roanoke Valley is a 400-bed institution. The Veterans Hospital has 1700 beds, approximately 250 of which are in the general medical and surgical category. There are approximately 225 physicians in the area. A Health Survey of the Community Survey Study Committee in 1967 stated that "the high proportion of well-qualified medical specialists is unusual and an indication of the attractiveness of the area and its facilities to physicians." (See Appendix E)

ACCEPTANCE BY ROANOKE MEDICAL COMMUNITY:

Obviously in considering such an affiliated program, not only must it have to be found feasible by various criteria, but would have to be desirable and acceptable both to the University of Virginia School of Medicine administration and faculty and the Roanoke medical community. At the first meeting of the Commission, it was agreed that individuals and representatives of other appropriate groups should be invited by the Chairman as indicated. Accordingly, the President of the Roanoke Academy of Medicine, Dr. John A. Martin, was invited to meetings of the Commission ans was asked to request the Academy to send a designated liaison representative regularly, which the Academy did.

Subsequently, the Roanoke Academy of Medicine, the medical staffs of the Community Hospital of Roanoke Valley and the Roanoke Memorial Hospital, and the Director of the Veterans Hospital, and the Roanoke Valley Regional Health Services Planning Council all endorsed the affiliated programs.

OBJECTIVES AND BENEFITS OF AFFILIATED PROGRAMS:

The Commission's study indicates several potential benefits and objectives which would be realized from affiliated programs and these will be discussed below:

(1) The educational capabilities of the University of Virginia School of Medicine could be extended by taking advantage of existing clinical facilities and medical personnel, willing to contribute their time and talent in teaching, as opposed to the expense of an entirely new State supported medical school, constructed and fully financed by the State.

(2) Another major objective of such an affiliated program would be the provision of an opportunity for students to see the practice of medicine in a community setting, the spectrum of disease, types of patients, and their many socio-economic and family problems. Inherent in such an experience would be the opportunity to see the model of capable and dedicated physicians in private practice. Furthermore, this setting could offer excellent opportunities for education and training programs in family practice. The net effect of this community experience could influence many more young physicians to enter family practice in Virginia.

(3) The development of affiliated programs between medical school centers and community hospitals not only could have a great impact upon the quality and standards of patient care, but is of invaluable assistance to the development of more and stronger internship and residency training programs in community hospitals. Weiskotten, et al.,[10] in a study of medical graduates found that the place of residency training was the single most important factor

in the determination of a physician's location for practice. Therefore, this Commission concurs with the earlier report of the State Council of Higher Education that "if Virginia is to retain its graduates and attract other graduates, there must be more attractive internships and residency programs in hospitals in Virginia." [9]

(4) This new type of close affiliation between a medical school and community medical facilities and their respective staffs could provide a greatly needed and unique opportunity to study and develop improvements in our methods of providing and delivering health care, including the effects of such programs as Medicaid and Medicare. The Universities and the communities could undoubtedly develop a much better mutual understanding and respect for the other's problems on a continuing basis.

(5) If such an affiliated program were available in Roanoke, it could have a very favorable influence upon continued development of medical facilities for patient care in this area of the State. This would be particularly desirable when one considers that patients from western Virginia are now much farther from medical centers than those in any other area of the State for specialized diagnosis and treatment. The same benefits would accrue to physicians, nurses, and others in the health sciences in western Virginia who are much farther away from the medical school centers for continuing education than those in eastern, central or northern Virginia. Approximately 1/4 of the State's population, 1/4 of the State's physicians, and over 1/3 of the hospitals in the State are closer to Roanoke than they are to the two existing medical school centers in Charlottesville and Richmond. Therefore, Roanoke and the large area of the State west of Charlottesville and Richmond is the largest geographic and population area without an existing medical school center, close proximity to one or planning and development for such.

STUDY OF OTHER AFFILIATED PROGRAMS:

As one of its first tasks the Commission felt it quite important to study and acquire information about affiliated programs in existence or in planning at medical schools in other states. It was thought important to have an early understanding of the problems as well as the potentialities, procedural ideas, contractural arrangements, logistics, mechanics and many other aspects of such a program. Ideally we wanted to find a program involving a state, and state-supported medical school, and a community comparable to our own, and such existed in our neighboring state of North Carolina. Therefore, Dr. Reece Berryhill, former Dean, and now Chairman of the Department of Community Medicine at the University of North Carolina School of Medicine, was invited to meet with the Commission early in this study. He expressed the opinion that their programs have been quite satisfactory and the proposed programs between Roanoke and the University of Virginia School of Medicine could be extremely successful. (See Appendix I)

Drs. Charles Crockett, Robert Keeley, Chief of Staff at the Community Hospital of Roanoke Valley, and Donald Barnes, member of the Roanoke Memorial Hospital committee for future planning, made a site visit in April, 1969.

The Chairman in February, 1969, met with Dr. George Lukemeyer, Associate Dean of the University of Indiana School of Medicine, Dr. Frank Bryan, Fort Wayne, Indiana, and Dr. Donald Olson of South Bend to obtain information about the Indiana Plan of affiliated teaching programs, which the Indiana state legislature supported with a 2.5 million dollar appropriation for the recent biennium. They reported great satisfaction with their program. (See Appendix I)

The Chairman also discussed new plans of the State of Illinois with Dr.

William Grove, Dean of the University of Illinois College of Medicine, and Dr. Graham Vance, a member of their faculty, and reviewed their entire written proposal for curriculum change and medical school expansion. They are taking the approach of locating several clinical schools of medicine in Rockford, Peoria, and Carbondale wherein some students, after their basic science courses, would receive their last three years of medical education in any one of these clinical schools affiliated with hospitals in their respective communities. (See Appendix I)

The University of Michigan Medical School has developed an affiliation agreement with the Henry Ford Hospital in Detroit which will permit the school to expand its first year enrollment "by providing an additional clinical base for additional students." (See Appendix I)

The new University of Connecticut Medical School likewise plans to have faculty members and clinical affiliations in community hospitals and many other schools have programs which vary in their extent, type and degree of affiliation.

The University of Massachusetts is presently considering various methods of developing a new medical school. (See Appendix I)

OPERATION OF AN AFFILIATED PROGRAM:

The preceding portions of this report have dealt with the background of why such programs should be considered and medical school and local medical community mutual acceptance. We now discuss the actual role affiliated medical institutions and resources might play in programs of medical education.

The basic concept simply revolves around the utilization of existing resources. Thus, if the University of Virginia School of Medicine's basic science division has now developed an educational potentiality greater than that of the currently existing clinical facilities at the University of Virginia Medical Center, then the use of additional existing clinical facilities elsewhere seems logical and reasonable. Specifically, medical students would take all of their basic science courses at the University of Virginia. During their next two years of education in clinical medicine they might spend varying periods of time at one or more affiliated institutions. Some students might have no such rotations and others might spend as much as an entire year, or even more, depending upon their interests and ultimate career plans. For example, a third year student might receive equal amounts of his clinical experience at the University of Virginia and a community hospital and if he became interested in family practice might take most or all of his fourth year in the community setting.

In the affiliated hospitals, students would receive some of their instruction from interested and dedicated practicing physicians contributing varying amounts of time to the program. Complementing and supplementing their instruction would be a nucleus of full-time faculty members based in the affiliated institutions. Local participants would have faculty status and receive some remuneration for part-time effort. Educational programs would involve medical students, interns, residents, continuing education for practicing physicians, and other health professionals.

During the past three years the University of Virginia School of Medicine administration and faculty have been analyzing and evaluating problems of importance in the current and future teaching of medicine to students preparing for various types of medical practice. These problems have centered about the best methods of increasing the output of physicians, involvement of medical students in community medical practice, continuing education of

practicing physicians and methods of keeping these physicians in closer contact with the medical schools, and systems of providing health care.

As a result the Medical School arrived at the concept of a "second faculty" based primarily in community hospitals, but maintaining close liaison with the University of Virginia School of Medicine and Medical Center. These faculty members would be drawn from a community after some years' experience as respected practitioners in their medical community, and with demonstrated interest in educational activities. They would then go to the University of Virginia School of Medicine for a year or more to work with the faculty, administration, and medical students in medical education. Following this, they would return to the community from which they had come continuing in their faculty capacity, and also directing intern, residency, continuing education, and student programs in their local community hospital rather than returning primarily to private practice. These physicians would spend four to five days each month and one continuous five-week rotation at the University of Virginia School of Medicine teaching and working with the faculty and administration each year after returning to their community where they would serve as liaison between the community and the University of Virginia. Under such arrangements, there could be an interchange of interns, residents and medical students between the University of Virginia School of Medicine and community hospitals under the direction of the community-based faculty member and selected physicians in the community. This program started in 1966 when Dr. Charles L. Crockett, Jr., of Roanoke became Associate Professor of Internal Medicine and Assistant Dean for Continuing Education at the University of Virginia School of Medicine where he spent eighteen months and then returned to Roanoke. In 1968 Dr. John Hortenstine of Winchester became Associate Professor of Medicine at the University of Virginia School of Medicine and has not returned to the Winchester community. Satisfaction with this new educational approach to the University of Virginia administration and faculty, the community hospitals, and medical students involved has been most gratifying thus far and other communities have expressed an interest in participation and inclusion in the study and planning of this Commission.

Planning and development of several important facets of such programs should be in depth, and to meet the urgent health manpower needs already delineated as rapidly as possible, there should be funding. The present study Commission worked without an appropriation, but having reached the conclusions that affiliated programs are feasible and urgently needed, feels that their further development deserves full support.

Funds will be needed for planning of student living quarters, communications linkages such as television and computers, curriculum changes, the inclusion of other communities, and the technical expertise necessary thereto for optimal development of the program and a further report to the Governor and General Assembly in 1972. (See Appendix J)

COSTS OF EXPANDING PHYSICIAN MANPOWER:

Concerning the question of whether affiliated programs are economically feasible, alternatives such as the costs of a completely new State-owned-and-supported medical school should be considered. Dr. Cheves Smythe,[11] Associate Director of the Association of American Medical Colleges, has analyzed the collective experiences and cost data from the 16 newest American medical schools authorized since 1960 and which since 1964 have either admitted or planned to admit medical students. He points out that "there are many variations among schools with regard to the items included in primary construction costs" but the study provides a comprehensive review of such costs. The *average* capital costs for the nine developing medical schools making little use of existing facilities were $44,393,000 at an average of $51.15

per square foot for a total cost of $546,000 per first-year M.D. candidate. The *range* was $24,941,000 for one school entering 64 students to $77,723,000 for another school entering 100 students. (See Appendix K)

Based on the experience of the schools under development, reasonable planning projections for a school enrolling 64 to 80 M.D. candidates per class are cited in the appendix. (See Appendix L) Of the basic capital outlay costs analyzed, they appear to be equally divided between the basic science and clinical facilities.

The average cost cited in Appendix L, $40,000,000 capital outlay for a class of 64 to 80 students, was derived from expenses incurred between 1960 and 1967. A conservative estimate of rising costs since that time would place that figure at $50,000,000 if one were to start *construction* now; and if *planning* were started now, by the time such construction would occur, the cost could be $60,000,000.[12]

In his conclusions, Dr. Smythe indicated that as of 1967, a school of 64 to 80 students per class would require a basic operating budget "in excess of $2 million a year as a planning target for those organizing new medical centers." This figure is, of course, inadequate at this time and will undoubtedly increase proportionately with other inflationary costs. If any state were to start planning now for a new school, by the time it could be operational, it would seem that a $3 million operating budget would be required to keep pace with the support provided other comparable state schools. (See Appendix M) Planning and other starting costs *prior* to major capital construction and the admission of the first medical students averaged an additional $1.5 million per school.

TIME:

Dr. Smythe's study further says, "Sponsors of new medical schools must plan to wait five years from authorization of a school to enrollment of a first class of students, to support a dean and his staff for almost four years before the first teaches; to wait nine years to graduate the first physician; and to see an average of twelve to fifteen years go by before the first graduates are actively involved in practice." [11]

In summary, it would seem that a completely new State-supported school for 64 to 80 entering students would entail a minimum of $60,000,000 in capital outlay, $3 million annual operating budget, and probably not enter its first physician graduates into practice until after 1980.

Conversely, proposed affiliated programs would not involve the construction of new basic science buildings or teaching hospitals, and there would be some considerable contribution of faculty and teaching time by physician participants in the communities involved.

The State Council of Higher Education's report [9] of 1964 concluded that "it is unlikely that there will be sufficient tax funds available for the construction and operation for a third State-supported school for medicine" and suggested that "the General Assembly should be encouraged to look with favor upon the proposed development of a new private four year medical school." (See Appendix C)

SUMMARY AND CONCLUSIONS OF STUDY COMMISSION REPORT

1. The National Advisory Commission on Health Manpower, the Association of American Medical Colleges (AAMC), and the American Medical Association (AMA) all agree that there is a severe medical manpower shortage culminating in a joint statement by the latter two groups that, "All medical schools should now accept as a goal expansion of their collective enrollments to

a level that permits all qualified applicants to be admitted." The AAMC further stated that, "All schools should immediately increase the number of entering students accelerating expansion by redistributing temporarily the use of existing resources."

2. The latest available study for the year 1967 revealed that Virginia had 104.5 physicians per 100,000 population compared to the national average of 132 physicians per 100,000 with only 19 of the 50 states having fewer active physicians per 100,000 than Virginia. The study also showed that the state is losing general practitioners faster than it is other types of physicians, and that the rural areas are losing physicians at a faster rate than urban areas.

3. Studies indicate that Virginia should have a goal of 400 physician graduates per year by 1975. This Commission finds that current plans of the state's two existing medical schools, the Medical College of Virginia and the University of Virginia School of Medicine, would provide approximately 240 physician graduates by 1975. It is, therefore, imperative that we graduate more physicians in Virginia if we are to alleviate the state's shortage of physicians and keep it from becoming more critical.

4. The University of Virginia could increase the number of its physician graduates and trainees through the utilization of the medical facilities, resources, and professional personnel of other medical communities in affiliated programs involving medical students, graduate training, and continuing education of health professionals.

5. Because of geographic proximity, existing educational programs, excellent hospital facilities and professional personnel, and enthusiastic acceptance by institutions and physicians, several affiliated programs between the University of Virginia and the Roanoke medical community already are functioning quite effectively and several physicians in the area hold faculty appointments at the University of Virginia School of Medicine as participants in these programs which are coordinated through an Assistant Dean based in Roanoke. The Community Hospital of Roanoke Valley with 400 beds, the Roanoke Memorial Hospitals with 725 beds, as of 1970, and the Veterans Hospital with 250 general medical and surgical beds, meet appropriate criteria for affiliations. There has been enthusiastic acceptance of affiliated programs by the Roanoke Academy of Medicine, the three hospitals named above, the Roanoke Valley Regional Health Services Planning Council, and the University of Virginia School of Medicine Administration and Faculty. An affiliated program with Winchester has also been initiated.

6. The objectives and benefits of affiliated programs are: (a) an economical increase in the number of physicians for the State; (b) through having training in the community setting, more students could see family practice and perhaps be attracted to it; (c) affiliated programs could greatly strengthen internship and residency training programs and it has been shown that the place of the latter is a very important factor in the determination of the physician's location for practice; (d) affiliated programs would enhance opportunities for studying and improving our system of providing health care; (e) an affiliated program in the Roanoke area could have a favorable influence upon the development of facilities in that area of the State for specialized patient care and continuing education for health professionals.

7. Affiliated programs of various types are being approached enthusiastically in several other States, including North Carolina, Indiana, Illinois, Michigan and Connecticut.

8. As an alternative to increasing the number of physician graduates, a completely new State-supported and financed school for 64 to 80 entering

students would entail, in all probability, a minimum of $60,000,000 in capital outlay, a $3,000,000 annual operating budget and probably not enter its first physician graduates into practice until after 1980. The State Council of Higher Education's report of 1964 had earlier concluded that "it is unlikely that there will be sufficient tax funds available for the construction and operation of a third State-supported school for medicine."

9. Under the affiliated program envisioned, the University of Virginia School of Medicine, with appropriate increases in faculty support, could increase its entering class about 20% in 1971, with subsequent increases up to 33% or even 50%. Following basic medical education there, some students would receive varying amounts of their clinical training in the latter two years of medical school in affiliated community hospitals. Instruction in the community setting would be provided both by practicing physician-faculty appointees, and a small nucleus of full-time faculty members based in the affiliated institutions.

10. This Commission's study and planning should be extended during the next biennium for more detailed development of the educational, training and curriculum opportunities in such affiliations, the possible inclusion of additional interested communities, and further analysis of the logistical, housing, and communication problems involved in such programs. Such study and planning will need financial support for administrative, consultative, clerical, faculty, travel and related services, up to $50,000.

ACKNOWLEDGEMENTS

The Commission wishes to express its appreciation to the many physicians in Roanoke and at the University of Virginia School of Medicine who so graciously and generously contributed their time, talent and knowledge to this study. Also, an expression of appreciation is given to the Roanoke Memorial Hospital for making facilities available for meetings of the Commission.

It might also be pointed out that *italics* has been used in numerous quoted passages, and in such passages, the *italics* is the Commission's.

Respectfully submitted,

CHARLES L. CROCKETT, JR., *Chairman*

WILLIAM H. FLANNAGAN, *Vice-Chairman*

WILLIS M. ANDERSON

K. R. CRISPELL

RUSSELL L. DAVIS

KOSSEN GREGORY

WILLIAM B. HOPKINS

JOSEPH P. JOHNSON, JR.

J. HARRY MICHAEL, JR.

FREDERIC W. SCOTT

JOHN W. WILLIAMS

APPENDIX 2

Report of the Commission on the Affiliated Medical School Program to Increase Health Manpower, 1970.

AFFILIATED MEDICAL SCHOOL PROGRAM TO INCREASE HEALTH MANPOWER

REPORT OF THE COMMISSION TO STUDY THE ADVISABILITY AND FEASIBILITY OF UTILIZING CERTAIN MEDICAL FACILITIES AS AN AFFILIATED OPERATION OF THE UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE

Richmond, Virginia
December 21, 1971

To: HONORABLE LINWOOD HOLTON, *Governor of Virginia*
and
THE GENERAL ASSEMBLY OF VIRGINIA

The Commission initiated its study in 1968 pursuant to Chapter 547 of the 1968 Acts of Assembly, as follows:

> An Act to create a Commission to study the advisability and feasibility of utilizing certain medical facilities in Virginia for clinical instruction of medical students and for training of students in allied health fields.

Whereas, health manpower needs in this State and nationally are not being met adequately; and

Whereas, a great portion of the extremely high cost of a medical education is related to the basic science education of medical students in their first two years; and

Whereas, the cost of starting a completely new medical school presently is estimated to be seventy-five million dollars; and

Whereas, both State-supported medical schools are currently expending their basic science capabilities considerably in terms of facilities and personnel as well as educational and research functions; and

Whereas, Norfolk continues to work toward an independent medical school which will enhance medical education and high quality medical care in the Tidewater area; and

Whereas, the western area does not have appropriate clinical training affiliations to fully utilize its medical resources and facilities; and

Whereas, Roanoke is the major population, industrial and medical center for western Virginia having two major community type hospitals with a major veterans hospital within a short distance; and

Whereas, it would seem desirable to further exploit these resources and to involve them in the health education potential of our State as well as to further utilize these facilities as a clinical center for the area; and

Whereas, such a development could have a great impact upon health training and medical care in our State at minimal cost; now, therefore,

Be it enacted by the General Assembly of Virginia:

1. § 1. There is hereby created a Commission to study the advisability and feasibility of utilizing the medical facilities, resources and professional personnel of Roanoke and other communities in the western part of the State

as an affiliated operation of the University of Virginia directed toward participation in the education of medical students in their clinical years, post graduate residency training and continuing education, as well as training the allied health professions.

§ 2. The Commission shall consist of eleven members; two of whom shall be appointed by the President of the Senate from the membership thereof; three of whom shall be appointed by the Speaker of the House of Delegates from the membership thereof; and six of whom shall be appointed by the Governor from the State at large. The members of the Commission shall receive no compensation for their services, but may be reimbursed for their necessary expenses incurred in attendance upon meetings of the Commission. The Commission may employ such consultant and secretarial services as may be necessary in the conduct of the study.

§ 3. The Commission shall complete its study and make its report to the Governor and the General Assembly of Virginia not later than November one, nineteen hundred sixty-nine. The Commission, from time to time and prior to such date, may submit such interim reports and recommendations to the Governor as it may deem expedient.

§ 4. The Commission is authorized to accept and expend funds, gifts and grants from private and public sources, including federal grants or contracts, for the purposes of carrying out its study.

The Commission rendered its report and recommendations to the Governor and General Assembly. At the 1970 Session of the General Assembly, the Commission was extended for another two years by Chapter 490, as follows:

> An Act to continue the Commission to study the Advisability and feasibility of utilizing certain medical facilities in Virginia for clinical instruction of medical students and for training of students in allied health fields and to appropriate funds to the Commission.

Whereas, the 1968 General Assembly of Virginia enacted Chapter 547 of the 1968 Acts of Assembly which created a Commission to study the advisability and feasibility of utilizing certain medical facilities in Virginia for clinical instruction of medical students and for training of students in allied health fields; and

Whereas, this Commission in its report to the 1970 General Assembly stated inter alia that the use of affiliated programs between the University of Virginia School of Medicine and Medical Center and certain other medical communities to increase health manpower and achieve other objectives are highly desirable and feasible and further development and expansion of such programs should be undertaken immediately; and

Whereas, more detailed development of educational training and curriculum opportunities in such affiliations and further analysis of the logistical, housing and communication problems involved in such programs is essential; and

Whereas, the use of such affiliation programs would increase the number of graduates of the University of Virginia School of Medicine, thus making more physicians available in the State, at a minimal cost to the State; now, therefore

Be it enacted by the General Assembly of Virginia:

1. § 1. The Commission to study the advisability and feasibility of utilizing

the medical facilities, resources and professional personnel of Roanoke and other communities in the State as an affiliated operation of the University of Virginia School of Medicine and Medical Center is hereby continued with its present membership. Any vacancy occurring shall be filled by appointment of the Governor. The members of the Commission shall receive no compensation for their services, but may be reimbursed for their necessary travel expenses in attending meetings of the Commission.

§ 2. The Commission may employ such expert and secretarial assistance as it may deem necessary to develop the educational training and curriculum opportunities in such affiliations, the possible inclusion of all interested communities, to analyze the logistical, housing and communication problems involved in such programs, and to render it any other assistance, advice and information it may deem necessary. For this purpose, there is hereby appropriated from the contingent fund of the General Assembly a sum sufficient not to exceed thirty thousand dollars.

§ 3. The Commission shall complete this study and make its report to the Governor and the General Assembly of Virginia not later than November one, nineteen hundred seventy-one.

Membership of the Commission was unchanged from the original appointees, who were: Honorable Willis M. Anderson, Roanoke; Dr. K. R. Crispell, Charlottesville; Dr. Charles L. Crockett, Jr., Roanoke; Honorable Russell L. Davis, Rocky Mount; William H. Flannagan, Roanoke; Honorable Kossen Gregory, Roanoke; Senator William B. Hopkins, Roanoke; Honorable Joseph P. Johnson, Jr., Abingdon, Senator J. Harry Michael, Jr., Charlottesville; Frederic W. Scott, North Garden; and John W. Williams, Charlottesville.

The Virginia Advisory Legislative Council and the Division of Statutory Research and Drafting made staff and facilities available to carry out this study; they assigned the necessary employees to assist the members and the study group at all times.

SUMMARY OF RECOMMENDATIONS

Recommendation No. 1: This Commission recommends the full implementation of the University of Virginia School of Medicine plans for expansion and the Affiliated Hospital Program, and the required budgetary support.

Recommendation No. 2: This Commission recommends full budgetary support of educational programs in family practice proposed by the University of Virginia and the Medical College of Virginia.

Recommendation No. 3: The Commission recommends the development of a grant proposal to establish an Area Health Education Center as a part of the University of Virginia Affiliated Hospital Program.

Recommendation No. 4: As the State begins to analyze its emergency health care system and especially the helicopter movement of trauma patients to major medical centers, the Commission recommends that consideration be given to the helicopter transportation of medical faculty and students as a means of achieving higher levels of utilization of the equipment and flight personnel.

Recommendation No. 5: The Commission recommends that a coordinated, long-range plan for the use of television, computers and other educational technologies in health education be developed and implemented.

Recommendation No. 6: This Commission recommends that its activities be continued for further expansion of the University of Virginia Affiliated Hospital Program, particularly an area health education center, and continued development of the University of Virginia program in Family and Community Medicine. The Commission should include representatives from the Senate, the House of Delegates, the University of Virginia, Virginia Commonwealth University, the State Council of Higher Education and the public.

INTRODUCTION

After the 1970 General Assembly enacted legislation continuing this Study Commission, it resumed its activities in April, 1970. Among its first actions, it established or invited liaison with the Medical College of Virginia — Health Sciences Division Virginia Commonwealth University,[1] the State Council of Higher Education,[2] and the VALC Committee Studying the Shortage of Family Physicians, as well as continuing liaison previously established.[3] During its first meeting, it approved the appointment of two consultants, Dr. James Lewis of the University of Virginia medical faculty and Dr. Donald Shotton from the Lynchburg community and later of the University of Virginia medical faculty, effective September 1, 1970. Subcommittees to study various aspects of the Commission's planning were appointed.

The University of Virginia School of Medicine administration and faculty were quite cognizant of the continued interest of the Commission in the progress of the Affiliated Hospital Program, the family and community medicine program, and various proposals concerning curriculum and class expansion being considered. Accordingly, the School of Medicine and the Study Commission kept each other mutually informed of progress in these various areas.

This report will describe the expansion of the Affiliated Hospital Program into various communities; the development of the family and community medicine program at the University of Virginia and in Roanoke; the considerable expansion of the 1971 entering class at the University of Virginia School of Medicine; various studies of this Commission pertinent to the continued development of the above; important new opportunities for future development; and this Commission's recommendations to the Governor and the General Assembly. Readers are also referred to the Commission's first report of November 1969. Summary, conclusions, and recommendations of that study are shown in Appendix A.

For better orientation, we will describe below in broad terms the current medical school curriculum and define certain terms and programs to be alluded to in this report.

By tradition, medical schools have had two major divisions: (A) the basic science division; and, (B) the clinical division.

(A) The basic science division includes the Department of Anatomy, Biochemistry, Physiology, Pharmacology, Pathology, Microbiology, and Laboratory Medicine for the instruction of medical students and graduate students. Such departments require considerable capital outlay for the rather

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[1] Dr. Kinloch Nelson, Dean, and Dr. M. Pinson Neal, Assistant Dean

[2] Dr. Roy E. McTarnaghan, Director

[3] John J. Butler, President, and Dr. Frank Mays, Executive Director, the Roanoke Valley Regional Health Services Planning Council; Dr. John Hortenstine, Winchester Memorial Hospital; Dr. Alexander McCausland, Chairman, Medical Education Committee of the Medical Society of Virginia; and Dr. John A. Martin, Roanoke Academy of Medicine

extensive and complex educational and laboratory facilities necessary for teaching and research. They are usually in separate geographic areas connected to clinical departments of a school of medicine. Medical students in the past have customarily spent their first two years in the basic sciences, and their final two years in clinical training. Recent changes in many medical schools have seen curriculums become more flexible so that the time devoted to basic science instruction has been reduced for many but not necessarily all students.

(B) The clinical division of a medical school includes the various departments of clinical medicine in the associated and affiliated hospitals related to a particular school of medicine. Included in the function of such departments are the clinical care of ambulatory out-patients, hospitalized patients, the clinical education and training of medical students, the graduate education and training of interns and residents, research in clinical problems of medicine, and, more recently, the study of improved methods of the provision of health care to the citizenry. This portion of the medical student's training in today's medical curriculum might be considered to occupy one-half to two-thirds of his over-all program.

The "Affiliated Hospital Program" refers to the affiliations with community hospitals to provide part of the clinical education and training of medical students from the University of Virginia.

The Division of Family and Community Medicine was established at the University of Virginia to lend special emphasis to these very important aspects of the student's education, particularly in preparation for a career in family practice. Students interested in such a career after graduation from medical school spend an additional three years in a Family Practice residency training program, the first year being the internship year.

The efforts of the Commission have been directed toward relating new trends in medical education to supplying the needs of health manpower in the State through cooperative programs between the University of Virginia and participating communities. Among the objectives of the Affiliated Hospital Program are: (1) an economical increase in the number of physician graduates from the University of Virginia School of Medicine; (2) a broadening of the physician graduates' educational experience, particularly in family practice and community medicine; (3) an increase in the number of family physicians; (4) increased retention of physician graduates in Virginia; and (5) expanded continuing education programs for practicing physicians and other health professionals.

The concept of the Affiliated Hospital Program developed by the Commission parallels the recommendation of the Carnegie Commission's recent report, *Higher Education and the Nation's Health.* The Carnegie Commission recommended: "the development of area health education centers in areas at some distance from university health science centers which do not have sufficiently large populations to support university health science centers of their own, and in a few metropolitan areas needing additional training facilities but not full health science centers. These area centers would be affiliated with the nearest appropriate university health science center and would perform somewhat the same functions recommended for university health science centers, except that the education of M.D. and D.D.S. candidates would be restricted to a limited amount of clinical education on a rotational basis, and research programs would be largely restricted to the evaluation of local experiments in health care delivery systems."

Thus it is apparent that the basic concepts of the Affiliated Hospital Program have prestigious national support for meeting the need for expanded physician education in Virginia.

I. Following the initial report of the Commission and the action of the 1970 General Assembly, the University of Virginia School of Medicine has accomplished the following:

A. Affiliated Hospital Program expanded:

1. Full-time faculty members in Family and Community Medicine, Internal Medicine, and Surgery have been appointed in Lynchburg, Roanoke, and Winchester.

2. Medical student rotations have been initiated in Lynchburg, Roanoke, and Winchester.

3. Family Practice Clinic and residency program in Roanoke.

4. Affiliated residency programs in Roanoke in eight (8) departments.

5. Search Committee for Associate Dean in Roanoke, activated.

B. Division of Family and Community Medicine, University of Virginia School of Medicine established:

1. Family Practice Clinic in Charlottesville.

2. Family Practice residency programs in Charlottesville.

3. Student rotations in Family Medicine.

C. Expansion of 1971 entering class at the University of Virginia School of Medicine to 124 students.

D. Formal liaison with the Medical College of Virginia through regular meetings [4] and the current Study Commission.

II. The Commission's activities and studies during the current biennium include:

A. Study of logistical problems:

1. Transportation for students, visiting faculty, and patients.

2. Housing for students and visiting faculty.

B. Communications linkage between University of Virginia and affiliated institutions:

1. Audiovisual technology.

2. Television.

3. Computers.

C. Curriculum Study and Planning:

1. Family practice programs.

2. Multiple track curriculum allowing for variable medical school curricula and variable time to receive M.D. degrees.

3. Basic clinical clerkships and electives in affiliated hospitals.

4. Allied Health professional programs.

D. Long-range planning for affiliations:

1. Variable types of programs.

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[4] ICMIC

2. Number and location of communities.

3. Area Health Education Center as proposed by Carnegie Commission Study of Higher Education.

4. Study of programs in other states.

E. Liaison with health professionals and institutions in Lynchburg, Roanoke, and Winchester; Medical College of Virginia (Virginia Commonwealth University); and, State Council of Higher Education.

IMPLEMENTATION OF THE AFFILIATED HOSPITAL PROGRAM UNIVERSITY OF VIRGINIA FACULTY ACTION

The University of Virginia, as a pilot program in 1968, began sending a few fourth year medical students to Roanoke for certain elective courses. Since then, steadily increasing numbers of students have requested rotations in affiliated hospitals in Lynchburg, Roanoke, and Winchester and students, faculty, and participants in the communities have all been quite satisfied with the results of the program. (See Appendices B, C, and D) Members of the faculty and administration of the University of Virginia School of Medicine have been studying the potential of the Affiliated Hospital Program since the creation of this Commission in July, 1968; have kept the Commission informed of progress of the program; and been intimately involved in its on-going deliberations. As a result of these deliberations, and satisfaction with the student electives, the Faculty of the University of Virginia School of Medicine in May, 1971, voted its approval of the following proposals relative to the Affiliated Hospital Program:

1. All basic science courses [5] would be taught at the University of Virginia School of Medicine.

2. The same basic clerkships [6] which are taught at the University of Virginia (Medicine, Neurology, Obstetrics, Pediatrics, Psychiatry, and Surgery) would also be provided in Roanoke.

3. There would be interchangeability between the clerkships offered at the University of Virginia and at affiliated hospitals in that a student could take all or a portion of his clerkships in either setting.

4. An appropriate search committee would be named to appoint a Director for the Affiliated Programs in Roanoke, who would also be Associate Dean, University of Virginia School of Medicine.

5. The Director for the Affiliated Programs, in Roanoke, in consultation with the Dean of the School of Medicine, appropriate University of Virginia Department Chairman, and other members of the administration, would be responsible for recruiting full time faculty in all clinical departments offering basic clerkships and for the educational program and hospital arrangements.

6. The target date for all basic clerkships to be available in Roanoke would be January, 1973, at which time the class of 120 students entering in September, 1971, would be beginning their clerkships.

7. Elective offerings would continue as at present and it would be

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[5] Basic Science Courses—Those courses normally taught during the first half of the medical school curriculum such as anatomy, biochemistry, etc.

[6] Clerkship—The medical student's initial educational experience involving clinical contact with patients under faculty supervision, usually occupying the entire third year of a four-year medical curriculum.

anticipated that the number of students taking elective experiences at these hospitals would continue to increase.[7]

8. An affiliation agreement between a participating hospital and the University of Virginia School of Medicine would be established.

Thus, after finishing their basic science courses, students might spend varying periods of time at one or more affiliated institutions, from as little as one month to an entire year or more, depending upon interests and ultimate career plans. A third year student particularly interested in entering family practice, for example, could elect to take as much as the entire last half of the medical school curriculum for his clinical clerkships and electives in the Affiliated Hospital Program. In the affiliated hospitals, students receive part of their instruction from interested and dedicated practicing physicians contributing varying amounts of time to the program. A small nucleus of faculty members, based full-time in the affiliated institutions, complement and supplement this instruction and are responsible for the over-all direction and supervision of the student program. The University of Virginia School of Medicine and the participating institutions share in the financial support of these faculty members. In addition to this support of faculty members and the teaching contributed by staff physicians, the participating hospitals provide their physical facilities, meals, and housing for some students, and many other tangible and intangible contributions. These community efforts obviously represent a significant contribution to the State's medical education obligations.

Since the time of the Commission's report two years ago, when Virginia was among the first of a few states looking at expansion of its medical schools through community hospital affiliations, many other medical schools around the country have begun to follow suit in this approach. At the recent annual meeting of the Association of American Medical Colleges in October, 1971, one of the key speakers called for the expansion of university hospital teaching to include community hospitals on an equal basis. Representatives of the Commission have visited the University of Illinois, which is developing semi-autonomous medical schools in Peoria, Rockford, and other cities and have had discussions with individuals active in the development of such programs elsewhere. In September, 1971, the Association for Hospital Medical Education held a special institute on "Community Hospital-Medical College Associations" to bring together representatives of such affiliations from many different areas. The Commission sent representatives to this very informative meeting which revealed that the University of Virginia Affiliated Hospital Program is farther along in its development than the majority of other programs. It is noteworthy that the University of Virginia program has received national attention. (*Medical World News*, June 11, 1971, p.361)

With the opening of its new basic science education building, and in anticipation of utilizing the potential educational resources of the Affiliated Hospital Program, the University of Virginia accepted an entering class of 124 students in September, 1971, representing a *30% increase* over the previous year, and *50% over 1966*. The latter exceeds the national average increase in class size of only 30% over the past five years. These actions definitely committed the University of Virginia to a program of expansion, providing many advantages to the State as previously enumerated.

Among these is the capability the affiliated hospitals have of providing an excellent setting for more intern and residency educational programs in family

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[7] Electives—Clinical educational experiences of one month's duration or more, usually occupying the fourth-year of medical school.

practice and other specialties. It is most important that these be fully developed since recent studies reaffirm the findings that the state in which the physician serves his internship and residency is the greatest single determinant of his ultimate location for practice.[8] Therefore the affiliated program can be very instrumental in the retention of practicing physicians in Virginia.

This expansion of class size and development of the Affiliated Hospital Program will require, and are contingent upon, appropriate budgetary support. *This Commission* believes that the University of Virginia School of Medicine and the participating affiliated institutions are *to be commended* on these very responsible and innovative approaches to some of the problems and costs of medical education, and the favorable effect they will have upon health care in Virginia.

This Commission recommends the full implementation of the University of Virginia School of Medicine plans for expansion and the Affiliated Hospital Program, and the required budgetary support.

FAMILY PRACTICE PROGRAMS

The University of Virginia, and the affiliated institutions, are cognizant of the relative shortage of family physicians in the State and, therefore, made a strong commitment to the teaching of family medicine to students, and the education and training of family physicians with the opening of the State's first individual model practice unit in September, 1971, at the University of Virginia and at the Roanoke Memorial Hospital later that same month. The two educational programs will be affiliated. Each of these model units for educating family physicians will offer 18 positions in the three-year residency training program for a total of 36.[9] There is a further potential for the development of an additional 24-30 such positions in the University of Virginia Affiliated Hospital Program, including Lynchburg, Roanoke, Winchester, and perhaps other communities, during the next two years. These units will also provide the setting for University of Virginia medical students' educational program in family medicine. Both of these programs have full-time faculty committed to them, and teaching from all other clinical departments on a part-time basis to provide the greatest expertise possible to students, interns, and residents in family medicine.

This Commission commends the University of Virginia and the affiliated hospitals for the extensive commitments they have each made to these very important programs in the teaching of family medicine, and education of family physicians to help increase their supply in Virginia.

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[8] In the context of physician training, then, the most effective way to attract physicians to a location is to increase the number of interns and residents that are being trained in that area. "The Relationship Between Medical Education and the Statewide Per Capita Distribution of Physicians", Scheffler, R.M.: *Journal of Medical Education*, Vol. 46, November, 1971, p. 995.

The report of the Carnegie Commission on "Higher Education and the Nation's Health" stated the following: "Since the majority of students undertaking residency training remain to practice in the states where they receive their training as indicated above, it is decidedly in the interest of states to contribute to the construction and development of institutions where residents are to be trained including university health science centers and area health education centers."

[9] Each program plans to enter six physicians into the three-year training program each year.

This Commission recommends full budgetary support of educational programs in family practice proposed by the University of Virginia and the Medical College of Virginia.

THE AFFILIATED HOSPITAL PROGRAM AND THE CARNEGIE COMMISSION REPORT

The Carnegie Commission's 1970 report, *Higher Education and the Nation's Health*, substantiated this Commission's earlier recommendations to develop an Affiliated Hospital Program in Roanoke, with its designation of Roanoke as an "Area Health Education Center". The Carnegie Commission's description of an area health education center is much the same as the concept developed by this Commission's original study in that such centers:

1. "Would be satellites of the university health science centers and would be visited on a regular basis by the faculty of the health science centers with which they were affiliated. Their educational programs would be developed and supervised by the Health Science Faculty, and their patient care functions would rely on the expertise of the health science personnel. The area centers in turn would provide assistance and counsel to the community and neighborhood health care facilities including the private practitioner.

2. "The nucleus of an area health education center would be a hospital, usually a community hospital, but perhaps in some cases a Veteran's Administration Hospital. The house officers at the Hospital would receive instruction from the faculty of the medical school with which the center was affiliated, in most cases on a visiting basis, but there would be a need for a small group of faculty members permanently located in the center to plan and administer both the educational programs for the house officers and continuing education programs for physicians and other health workers in the surrounding area. M.D. and D.D.S. candidates would receive part of their clinical instruction in such centers on a rotating basis. Within the hospital, or adjacent to it, there would have to be office space for faculty members and other administrators of the educational programs as well as classrooms. Like the university health science centers, the area centers should cooperate with comprehensive colleges and community colleges in the area in planning curricula for allied health workers." (pp. 56-57)

The Carnegie Commission enumerated the functions of area health education centers as follows:

1. To maintain a community hospital of outstanding quality, many of whose patients would be admitted on a referral basis from smaller communities in the surrounding area.

2. To conduct educational programs under the supervision of the faculty of the University Health Science Center with which the area center is affiliated.

3. To have these educational programs include:

a. Residency programs.

b. Clinical instruction for M.D. and D.D.S. candidates who would come there from the University Health Science Center on a rotating basis.

c. Clinical experience for students in allied health programs.

d. Continuing education programs for health manpower in the area, conducted in cooperation with local professional associations.

4. To provide guidance to comprehensive colleges and community colleges in the area in the development of training programs for allied health professions.

5. To cooperate with hospital and community agencies in the planning and development of more effective health care delivery systems.

In response to these very practical suggestions for using existing resources, Congressional legislation establishing such "area health education centers" is expected to be passed before the end of 1971. "Area health education centers" are envisioned by the Bureau of Health Manpower as follows:

"Introduction

"Area health education centers will be developed and supported for the purpose of increasing the opportunities for training, retraining and advanced training, including continuing education, of health personnel. Increasing the opportunities for educating health personnel in underserved areas will also increase the likelihood of trained personnel remaining in the area, thus having a positive effect on the current maldistribution of personnel delivering health care services.

"The network of institutions linked together to carry out the functions of the center will provide a means of extending advancements in health care services, including more effective delivery systems, to local communities. By utilizing existing health care facilities in combination with educational institutions to educate needed health personnel, both the quality and quantity of health care can be increased in underserved areas.

"Linkage between health service organizations and educational institutions will be established to provide students both academic education and clinical practice appropriate to their discipline. Students will have the opportunity to learn their skills in settings which promote the team concept of comprehensive health services. Such a setting will allow clinical practice to influence health curricula in a constructive manner. As the roles of health personnel alter, appropriate changes to reflect the new roles of health personnel can be made in the curricula.

"Functions of a Center

"The functions of an AHEC include, but are not limited to, the following:

A. Conducting the following educational programs:

1. Continuing education for health practitioners in the area served by the center. (Continuing education means training which is in addition to that usually considered appropriate for qualification or entrance into the health field. Internship and residency programs are not considered to be continuing education.)

2. Residency training in primary care (family, internal or pediatric medicine).

3. Undergraduate professional education in one or more health disciplines; e.g., nursing, medicine, dentistry, medical technology, physical therapy, etc.

4. Programs for training of health personnel as a health care delivery team.

B. Providing assistance to educational institutions and health care facilities in the area in the development of training programs for health personnel, including technical assistance to educational institutions offering preprofessional education required for admission to health occupations curricula.

C. Providing outpatient and inpatient medical services and serving as a referral center for other patient care facilities in the area.

D. Assisting in the manpower planning and implementation of effective health care delivery systems for the area.

"The AHEC will develop and provide training programs to meet identified health manpower needs, utilizing existing resources to the maximum extent possible. Training programs include undergraduate professional education to prepare students to enter the health field, advanced training, continuing education, and retraining of health personnel. The AHEC will be expected to sustain or augment its health service function.

"Close liaison with Comprehensive Health Planning Agencies and other planning organizations will be established. The AHEC will, when possible, be responsive to manpower training needs identified by local planning agencies.

Location

"Area health education centers will be established in locations that have or can develop the educational and training resources to conduct effectively the health education functions described above. Initial priority will be given to remote or urban areas that are generally recognized as being underserved by existing health care delivery systems.

"Factors to be considered in evaluating a proposed AHEC site include:

Its location vis a vis existing communication and transportation networks, such as those that define integrated economic trade areas; the number, type and size of health care facilities in the site area; the distribution and type of existing health education and training programs in the area; the proximity and nature of accredited educational institutions in the area; the size, mortality and morbidity rates, and other health care indices of the population to be served by the proposed AHEC.

"Finally, of course, the willingness and capability of the institutional complex proposing an AHEC to undertake the longterm commitment required, as evidenced by dedication of other resources to go along with BHME support, will be a major factor in initial evaluation of proposed AHEC site locations.

Eligible Participants

"Agencies, institutions, organizations or consortia which have established linkage between institutions providing medical services and accredited educational institutions or which can demonstrate that, with the aid of a health manpower education initiative award, such linkage can be achieved are eligible to receive support for the development and maintenance of an area health education center.

"A lead agency will be responsible for the development of the linkage between participating institutions and will serve as the responsible fiscal agent and manager of the activities carried out by the network of institutions forming the center."

It is apparent that the foregoing concepts, and the plans originally developed by this Commission, the University of Virginia, and the participating institutions in the Affiliated Hospital Program are virtually identical. In 1970 the General Assembly acted favorably upon this Commission's recommendation to provide funding for the first phases of this program, as well as continuation of the Commission's planning with the University of Virginia and the participating institutions. As a part of this planning, this Commission requested one of its consultants to meet with the Associate Director of the Bureau of Health Manpower Education concerning area health education centers. The Virginia Regional Medical Program, having expressed interest in such a program, also sent a representative to this meeting. The consensus of opinion was that legislation providing for these centers will be passed; and that the University of Virginia Affiliated Hospital Program, with continued implementation and State support, would particularly qualify for additional federal support and development under this legislation.

Such a center has a tremendous potential for extending programs, not only in the Western Virginia and Appalachia regions, but also into many other areas of the State for the education and training of all types of health professionals, and improving health care delivery. The basic concepts and principles of the University of Virginia Affiliated Hospital Program for medical students would seem to be applicable to educational programs in nursing and other health professions. It is expected that the major financial support of such centers would come from extensive federal funding. Such funding might be of particular benefit in the development of certain facets of the Affiliated Hospital Program such as television, computers, and air transportation. The budgetary support of the University of Virginia's Family and Community Medicine Program and its Affiliated Hospital Program should demonstrate the State's commitment to the concept of such a Center. This Commission, the University of Virginia, and the affiliated hospitals have already started developing an appropriate grant proposal. We believe that the continuation of this Commission would help insure continuity in the development of plans for an area health education center. This could be accomplished with quite modest funding for the Commission. The Commission has been encouraged that the Virginia Regional Medical Program may assist with funding and believes that other local sources and agencies might also participate. Among its recommendations, the Carnegie Commission stated that "the states, in cooperation with universities and with regional and local planning bodies, should also play a major role in the development of plans for the location of university health science centers, area health education centers, and comprehensive colleges and community colleges providing training for allied health personnel." To reiterate, the Commission cannot over-emphasize the very important and significant opportunity that the development of such an area health education center affords the State.

The Commission recommends the development of a grant proposal to establish an Area Health Education Center as a part of the University of Virginia Affiliated Hospital Program.

ACTIVITIES OF THE COMMISSION 1970-72

The Commission's first report to the Governor and the General Assembly demonstrated that the Affiliated Hospital Program was a feasible approach to increasing the number of physicians graduating from the University of Virginia. In Appendix J of that same report, the Commission suggested the scope of its efforts for the 1970-72 biennium. The planning and development studies outlined at that same time included the following: (1) Study of

logistical problems; (2) Communications linkage between University of Virginia and affiliated institutions; (3) Curriculum study and planning; and (4) Long-range planning for affiliations. These topics are treated in the following paragraphs.

Studies of Logistical Problems

The studies of logistical problems focused on the problems of housing and transportation for students and visiting faculty participating in the Affiliated Hospital Program. Individual studies of these topics were prepared for the Commission's consideration and they are included as Appendices E and F to this report. Summaries of these reports are presented below.

Transportation

The potentially high travel times in the affiliated program as it is now envisioned caused the Commission to consider the feasibility of using private aircraft as an alternative to surface travel by automobile. The dollar value of the potential faculty time savings generated through the use of aircraft rather than automobiles is estimated at $90-100,000 per year. However, if business discussions, dictation, or other work-related thought, is accomplished during the automobile trip, savings would be less.

Concerning mileage costs, there is no firm basis, at present, for estimating the volume of travel between the several possible origins and destinations. It appears that the completion of I-64 in the interstate highway system and the four-laning of U. S. 29 in the arterial highway system will be completed by the time this program would be generating a great volume of trips. These improvements to the highway system are important considerations because they further enhance the automobile's characteristics as a low-cost, highly flexible carrier. From the point-of-view of the State, the already low cost per mile of surface travel is reduced further by the fact that the current 9 cent per mile reimbursement for private cars is below the actual cost of operation.

The University of North Carolina Medical School has an extensive private aircraft operation which furnished a nearby model for the Commission's consultants to study. In North Carolina the aircraft problem is considered to have been instrumental in making the Medical School truly a statewide institution. When the value of personnel time lost in travel is added, conventional aircraft show an average total cost per trip that is lower than that for automobiles. (See Table 1 below.)

Table 1

Comparative Operating and Time Costs
for an Average Trip

	Auto	*Conventional Aircraft*	*Helicopter*
Operating Costs [a]	$ 9.90	$17.65	$58.80
Value of a Passenger's Time [b]	32.25	16.01	15.06
	$42.15	$33.66	$73.86

[a] Auto at 9¢/road mile with driver/passenger.
Conventional Aircraft at 18¢/air mile.
Helicopter at 60¢/air mile.

[b] Value of the passenger's time based on a $25,000 annual salary.

SOURCE: Staff Computations

Nationally, there is rapidly growing interest in and use of conventional aircraft and helicopters for transportation of emergency patients. Much of this interest can be traced to the Vietnam experiences with helicopters and to the availability of highway safety funds for their purchase and operation.

It is clear that helicopters are going to become more widely available to State and local governments as the Vietnam War winds down. Their important potential for transporting trauma patients as an integral part of the State's emergency medical system should be developed fully. The several airplanes and the two helicopters now owned by the State should be made a part of the emergency health care transportation system to the maximum extent consistent with other demands for their use. As the State begins to analyze its emergency health care system and especially the helicopter movement of trauma patients to major medical centers, *The Commission recommends* that consideration be given to the helicopter transportation of medical faculty and students as a means of achieving higher levels of utilization of the equipment and flight personnel.

Housing

Exact figures on the need for student and visiting faculty housing depend on the mechanics of the Affiliated Hospital Program, i.e., will students go to one of the cities for a full academic year's education or for lesser periods? At this point, it appears likely that students will be able to select combinations of activities that will run the gamut from one month to two academic years. In the latter case, i.e., an academic year or longer in one of the cities, the student will be responsible for his own housing just as if he were living in Charlottesville. The Commission believes that students assigned to affiliated hospitals for lesser periods should have housing provided, since such assignments could create certain problems. For example, the student may have a spouse employed in Charlottesville or children in Charlottesville schools, and hence, be forced either to maintain two residences or accept the loss of his spouse's income or shifting of his children's school. In an attempt to alleviate some of these problems and to assist the development of the Affiliated Hospital Program, each of the hospitals has agreed to provide some living accommodations at its own expense. Current plans call for housing to be provided to the students without obligation to their families.

As the Affiliated Hospital Program develops further and the need for student and faculty housing becomes more clearly known, recommendations will be made later as to the amount and type of housing that should be available.

Biomedical Communications

The Commission's studies of biomedical communications, have focused on improved medical education through the use of advance audiovisual, television, and computer technology. The effective use of this technology in the Affiliated Hospital Program demands systematic planning which links the University of Virginia Medical Center and the participating hospitals through a coordinated development program. (See Appendix G)

It is apparent that this planning and development of a biomedical communication system for the Affiliated Hospital Program must begin by building a strong core at the University of Virginia Medical Center. The quality and effectiveness of any such connecting network will depend on how well this core is developed and managed.

Audio-Visual Technology

Modern medical education programs make broad use of audiovisual technology, including slides, filmstrips, motion picture films, and often television and computers.

Television and its various modifications are different in that they are expensive, sometimes require technical expertise to operate them, and demand professional quality production of the educational programs. However, television has dual potential in the Affiliated Hospital Program since it may be used both as an instructional aid and as a communication device. Ultimately, it may be desirable to have the capability to produce and transmit live, color programs of network broadcast quality between any or all of the seven points in the proposed network: University of Virginia Medical Center, Roanoke Memorial Hospital, Community Hospital of Roanoke, Veteran's Administration Hospital (Roanoke-Salem), Winchester Memorial Hospital, Lynchburg General Hospital, and Virginia Baptist Hospital (Lynchburg).

On a lesser scale but still with great potential for medical education, video-records (tapes, discs, EVR) could be used. The promise of these television devices lies in the fact that the playback machine attaches to a conventional television receiver and the technical expertise required of the operator is about the same as that needed to operate a home record player. Program material may be purchased, rented, and/or produced locally depending on the need and the availability of appropriate material. Physician education is only one of a broad range of health related applications which include programs for other health professionals and/or hospital employees at all levels.

Program material feasibly could be broadcast over commercial cable television (CATV) systems to local hospitals, physician's offices, and classrooms. Eventually, a stationwide educational television network could be used for those purposes, also.

The University of Virginia Medical School is a member of the Southern Regional Dean's Group which has placed its priorities on coordinating the development of Biomedical Communications, especially television and computer applications, among the twenty-six Southern Medical Schools. This Group has recently received a grant which will enable it to begin this effort.

Computers

Computer-assisted instruction (CAI) and computer-managed instruction (CMI) are undergoing widespread development as medical educational devices. The principal advantage of these teaching techniques is flexibility. Faculty and students can work with the equipment at their convenience on a 24-hour schedule of operations. Program material can be modified easily in both structure and content. The material is adapted easily to various learning styles. Through the use of CAI/CMI, the student is able to advance at a pace based on his existing knowledge and his rate of learning. The actual equipment involved may serve multiple purposes.

Other advantages of CAI/CMI are that the user receives immediate feedback to his responses and he is actively, rather than passively, involved in the learning experience. CAI/CMI also make possible the accomplishment of some educational outcomes that would be difficult by other means, e.g., simulation of "real-world" situations or forced "overlearning" of crucial, but often forgotten, information. In a sense, CAI/CMI enable duplication of normal student-tutor interaction.

A number of computer learning programs have been developed at other universities and medical schools and there is now sufficient experience with them for medical educators to say that they are extremely effective. The University of Virginia Medical Center is on-line to an IBM 360/40 at the Ohio State University School of Medicine and students and faculty are being exposed to this advanced form of educational technology. Further study of that program has resulted in a proposal to provide CAI to the University of Virginia and its affiliated hospitals. The program material is available without cost (other than reproduction costs).

CAI/CMI also are not limited to applications in physician education. They can be used successfully by other health personnel in the allied health fields and by hospital employees.

The Commission has given careful consideration to the feasibility and cost of using television, computers, and other education technology in the Affiliated Hospital Program. *The Commission recommends* that a coordinated, long-range plan for the use of these educational technologies in health education be developed and implemented.

COMMISSION RELATIONSHIPS

Early in the Commission's existence, it recognized that it could be broadly related to other study groups, institutions, and communities than the University of Virginia Medical Center and the initial group of affiliated hospitals. The focus of these relationships is concern over the present and future supply of primary care practitioners in Virginia, especially in the rural areas and in the inner-city areas of the major urban centers. This problem is a well-documented national one, not limited to Virginia. In the Commonwealth, there is an obviously high degree of official concern as demonstrated by the concurrent establishment in 1970 of the Virginia Advisory Legislative Council's Committee Studying the Shortage of Family Physicians, the Rural Affairs Study Commission Subcommittee on Rural Health, and this Commission's continuation.

The VALC has been interested in how and why the problem developed, what were its dimensions, and what was being planned to eliminate or at least alleviate the family physician shortage in Virginia. The Rural Affairs Study Commission has been interested in the impact of the physician shortage on rural life and rural development and in determining the magnitude of the problem. This Commission, among other objectives, has been interested in determining how greater numbers of students, with a broader curriculum including family and community medicine, can be educated in a more economical fashion. Thus, these three efforts were directed at different aspects of closely related problems. In recognition of the common focus of these efforts, this Commission invited liaison with the VALC Committee and invited its members to a meeting in Richmond during the 1970 session of the General Assembly. It has had informal liaison with the Rural Affairs Study Commission Subcommittee on Rural Health through a University of Virginia faculty member on that body.

As a result of these relationships and of its own deliberations, it appears that the problems of physician supply and distribution, increased productivity of the medical schools, and improved medical education are long-term problems requiring on-going efforts for their solution. The University of Virginia Affiliated Hospital Program specifically will require continued planning for further expansion; curricular changes; potential uses of television, computers, and other communications technology; transportation; and logistics. A mechanism may be needed for the receipt and disbursement of funds other than those specifically appropriated to the school by the State.

This Commission recommends that its activities be continued for further expansion of the University of Virginia Affiliated Hospital Program, particularly an area health education center, and continued development of the University of Virginia Program in Family and Community Medicine. Although this Commission's efforts initially were directed at studying expansion of the University of Virginia School of Medicine through affiliations with certain community hospitals, the Commission, the University of Virginia, and the affiliated hospitals agreed that there might be activities of mutual interest to the Medical College of Virginia. Examples and objectives of similar programs already existing, as well as being developed, on a statewide basis from the School of Medicine of the Medical College of Virginia are detailed in Appendix H. Therefore, it is important that the two medical schools continue to coordinate and maintain close liaison in undergraduate, graduate and continuing medical education to achieve the most effective and efficient programs for the Commonwealth of Virginia. Accordingly, liaison representatives from the Medical College of Virginia have been meeting regularly with the Commission and University of Virginia representatives during this biennium and there is mutual agreement that, if the Commission is continued as recommended, its composition should include formal representation by the Dean of the School of Medicine from both institutions. The State Council of Higher Education should also be represented. This would not alter the Commission's focus on the further study and development of the various University of Virginia programs and area health education center as already described, but would allow for mutual planning and coordination between the two schools where indicated.

The Commission's responsibilities should include the following:

1. Continued study and planning for the further development of the University of Virginia Affiliated Hospital Program for undergraduate, graduate, and continuing education programs for family physicians, other medical specialists, and other health professionals.

2. Planning for, and development of, an Area Health Education Center.

3. Assure that momentum is sustained toward increasing the number of family and other type physicians in Virginia, by encouraging further development of such programs and alerting the General Assembly to the need for additional programs to prevent future health manpower shortages.

4. Assist in coordination between the medical schools as they develop affiliations with communities for undergraduate, graduate, and continuing education programs for family physicians, other specialists, and other health professionals. This could include pilot studies in use of computers, television and transportation modalities.

5. Study of such other problems related to medical education and health as might emerge at the discretion of the General Assembly and the Governor.

6. The Commission should make a report to the Governor and General Assembly by November 1, 1973. An interim report and recommendations may be submitted as the Commission may deem expedient, or as requested by the Governor or General Assembly.

The Commission should consist of members of the Virginia Senate (2) and House of Delegates (3); the Dean of the University of Virginia School of Medicine or his representative; the Dean of the School of Medicine, Medical College of Virginia, Virginia Commonwealth University or his representative; the Director of the State Council of Higher Education or his representative; and, four public members to be appointed by the Governor.

Liaison should be established with the State Council of Higher Education Committee on Education for Health Professions and Occupations, affiliated hospitals, and other institutions, agencies, and organizations as appropriate. The Vice-President for Health Sciences of both the University of Virginia and Virginia Commonwealth University should be non-voting members.

The Commission should receive an appropriation in the amount of $20,000 to provide for secretarial assistance, consultative staff, and travel.

Suggested legislation to implement this recommendation is contained in Appendix I.

SUMMARY AND CONCLUSIONS

1. This Commission reaffirmed in general its report to the Governor and the 1970 General Assembly that there is a shortage of physicians and other health manpower nationally and in Virginia. The State should provide full budgetary support for the University of Virginia Affiliated Hospital Program and Family and Community Medicine Program because of their impact upon the alleviation of these and other related problems.

2. Affiliated programs with hospitals in other communities are an economically feasible mechanism for expanding education programs of the University of Virginia School of Medicine. The Affiliated Hospital Program has been expanded to the communities of Lynchburg, Roanoke, and Winchester. Full-time faculty members and voluntary teaching faculty have been appointed in each of these communities. The participating affiliated hospitals in these communities represent an aggregate of 3200 hospital beds. Students, faculty, and community participants have all expressed great satisfaction with the educational programs resulting in a steadily increasing request for rotations in the affiliated hospitals by University of Virginia medical students.

3. With the combination of its new basic science education building and the potential resources of the Affiliated Hospital Program, the University of Virginia accepted an entering class of 124 students in 1971, representing a 30% increase over the previous year and 50% over 1966, considerably in excess of the national average of class expansion during this period.

4. In response to the shortage of family physicians in Virginia, the University of Virginia and the Roanoke Memorial Hospital opened the State's first two model family practice units in September, 1971, to serve as the educational setting for medical students and residents in family practice. These two programs, which are affiliated, will each offer six positions in each of the three years of the prescribed residency training program for a total of thirty-six. There is a further potential for the development of an additional 24-30 such positions in the University of Virginia Affiliated Hospital Program in Lynchburg, Roanoke, Winchester, and other communities.

5. The Affiliated Hospital Program provides additional internship and residency graduate training opportunities of high quality in family practice and other specialties. It has been demonstrated that the availability of such programs will increase the retention of physicians in the State.

6. The Carnegie Commission's 1970 report on "Higher Education in the Nation's Health" designated Roanoke as one of one hundred twenty-six "Area Health Education Centers" for the nation, the only locality in Virginia to be so designated. Congressional legislative action is in progress to establish these centers, and their close similarity to the University of Virginia Affiliated Hospital Program should place Virginia in a strong position to obtain a very significant federal grant for the establishment of such a center.

7. There is an important potential in the use of conventional aircraft and helicopters, for patient transportation; but also for students and faculty in the Affiliated Hospital Program.

8. Participating affiliated hospitals are now providing housing and meals on a limited basis for medical students in the Affiliated Hospital Program and more definitive plans will have to be developed later as the number of students going to various communities becomes more clearly known.

9. There is an excellent potential for the use of various forms of television and computers in medical education. These media not only have great potential as learning techniques but could ultimately prove economical.

10. Because of the excellent progress of the University of Virginia's Family Medicine Affiliated Hospital Programs, expansion of the entering class and other developments, the continuation of this Commission could be most important in sustaining momentum and optional development of these programs. The planning, application for, and development of an Area Health Education Center would be a major objective of the Commission's activities. If continued, the Commission's representation should be broadened to provide coordination between the University of Virginia and the Medical College of Virginia Health Sciences Division of Virginia Commonwealth University, and the State Council of Higher Education in health educational programs. This study and planning will need financial support for administrative, consultative, clerical, and related services, and travel up to $20,000.

Respectfully submitted,

CHARLES L. CROCKETT, JR., *Chairman*
WILLIAM H. FLANNAGAN, *Vice Chairman*
WILLIS M. ANDERSON
K. R. CRISPELL
RUSSELL L. DAVIS
KOSSEN GREGORY
WILLIAM B. HOPKINS
JOSEPH P. JOHNSON, JR.
J. HARRY MICHAEL, JR.
FREDERIC W. SCOTT
JOHN W. WILLIAMS

APPENDIX 3A

Draft of Manpower Study of the State Council of Higher Education.

State Council of Higher Education for Virginia

Plan for the

STUDY OF HEALTH MANPOWER

1. *Introduction*

The State Council of Higher Education for Virginia is the coordinating agency for all post-secondary educational programs for all health professions and occupations. The Committee on Education for Health Professions and Occupations is advisory to the State Council in carrying out this function.

The budget adopted by the 1973 session of the General Assembly contained an appropriation of $50,000 to the State Council of Higher Education to conduct a study of health manpower in Virginia during 1973-74. Efforts will be made to secure additional funding for specialized aspects of the study for its future extension.

This study is to be conducted by the State Council utilizing its Committee on Education for Health Professions and Occupations as the major advisory committee for the study. In addition liaison will be maintained with other agencies and Commissions engaged in study of specific health manpower and health care services in Virginia. The Medical Facilities Commission, on which some members of the State Council Committee and staff also serve, will be utilized as a major resource. Close liaison will be maintained with the Virginia Comprehensive Health Planning Council. The involvement of allied health groups, the major employers of health manpower, the financers of health care and the consumers of health care services is also anticipated.

II. *Purposes and Goals*

The health manpower study is designed to provide the State Council of Higher Education with an information base which can be utilized in effective planning for the education of health manpower.

The two major goals of the health manpower study are:

1. Develop a statewide plan for the education of health manpower.
2. Develop an information system for health manpower.

To more clearly identify these goals, it should be recognized that the second goal is supportive to the first goal and will provide the ongoing information on health manpower essential to the State Council's planning process. Once this system is developed, it will become a part of the overall State Council's information system providing essential data to the State Council's staff and the Committee on Education for Health Professions and Occupations.

The planning process is ongoing and a major function of the State Council of Higher Education for Virginia. More specifically, the Committee on Education for Health Professions and Occupations is to advise the State Council in planning for health manpower. The first goal will be both short ranged and long ranged since the Committee will be engaged in the planning process throughout the study phase and on a continuing basis. Information which the study will continuously make available to the Committee will be utilized in the decision making process on an operational basis, i.e., program review as well as in long range planning.

The final report of the study will be utilized by the Committee on Education for Health Professions and Occupations in the development of a statewide plan for the education for health manpower which will be recommended to the State Council for implementation. The implementation of the information system for health manpower will provide the Committee and State Council with the essential data for an ongoing evaluation of the plan and revision as deemed necessary.

III. *Technical Approach to the Study*

A. Supply

1. Current Supply

a. Licensed Health Occupation: Mainly the independent practitioners

The major resource will be the licensing agency and the information available from records maintained in those agencies. Information on licensed health personnel desired includes: location, age, sex, field of employment, highest level of training. Other studies of the various licensed occupations will also be utilized as resource material. These include other studies made in Virginia, in other states and on the national level.

The mobility, longevity, and active status of the practitioners is essential data which may be more difficult to obtain.

b. Current supply: Employed groups, mainly the non-licensed health occupations.

Some of this group may be registered or certified on a national basis. This resource must be explored for specific data related to Virginia. All data collected on these groups in the 1971 survey (HEALTH MANPOWER — Virginia 1971) should be evaluated for update by sampling, attempts to collect from non-respondents and/or survey of new facilities now included in study. A repeat of the total survey may be the only way to get this information. This approach is the least desirable from the time frame, the expense involved and the questionable ability to improve the technique or percentage of response. It is suggested this decision not be made early in the study. Note: Future information may become available from surveys to be done by USDHEW — BHME.

2. Future supply

a. Mission statements for all post secondary institutions (public and private) will be needed. These statements should include the following information:

1) mission of the institutions related to health professions and occupations.

2) intent for specific educational programs in health professions and occupations.

b. Enrollments (actual and potential), attrition rate and number of applications received for each institution program by program, will be required.

c. Credentialing changes

1) Continuing education requirements for recertification or relicensure should be reviewed in terms of increased demand for continuing education programs for the various occupations.

2) The changes in the various credentialing processes related to the placement of exmilitary corpsmen should be reviewed in terms of potential increases in supply in some health occupations.

d. Organizational framework for the Education of Health Manpower

1) Area Health Education Center Concept.

2) Regional Consortia Approach.

3) Linkage with university medical center — outreach of the University Medical Center.

B. Requirements

1. Current situation — the emphasis in this area will be on surveys which indicate the number of vacancies now existing in the major categories of health manpower.

2. Future situation

a. Population changes — the emphasis in this area will be on growth and change in population in the state as a whole and in its various planning districts, and the projection of health manpower requirements utilizing ratios to population.

b. Planned changes in the number and types of health care facilities will need to be determined. This would involve a determination of new health care facilities being planned and expansion or reduction in current health care facilities. The major resources for this information will be Comprehensive Health Planning — State and Areawide Agencies.

3. Projected changes in health care delivery patterns

a. Mental health facilities including the projected change in number of beds in state hospitals, the development of community mental health facilities and staffing changes anticipated. The major resources for this information will be the Commissioner of Mental Hygiene and Hospitals.

b. Public Health — anticipated increase or decreases in numbers and types of services and health manpower increases or decreases anticipated. The major resource for this information will be the Commissioner of Health.

c. Changes in primary health care delivery — the impact of the Family Practice Programs in the medical schools as

well as planned or operational nurse practitioner or physician associate programs should be reviewed. State and national studies have been made in this area which can serve as a major resource for information as well as the Family Practice Departments in the medical schools.

d. Rehabilitation services — anticipated increases or decreases in the number and types of rehabilitation service available in Virginia and the anticipated health manpower required. The Department of Vocational Rehabilitation can be utilized as a major resource for this information.

4. Technology Changes — the Bureau of Health Manpower Education, National Institutes of Health, has contracted for a study of the impact of technology changes on health manpower requirements. This study can probably be utilized as a major resource for the changes which can be anticipated in Virginia.

5. Impact of federal legislation — major health care programs now being considered on the federal level should be reviewed in terms of the impact this may have on health manpower requirements in Virginia.

   a. National Health Insurance — although the exact form National Health Insurance will take is yet to be determined, the studies made of the Kaiser Plan and the National Health Insurance Plan of New York should provide information on the additional services required and the manpower needed to provide these services.

   b. Health Maintenance concept

6. Rural and inner city health care — the study of different methods for the delivery of health care services in these areas, the types of health manpower required in these areas and the potential regionalization of health services in these areas. The Comprehensive Health Planning Agencies would be a major resource in this area of the study.

IV. *Finances and Costs*

Data will be needed on the cost of providing faculty, facilities and other teaching resources for health manpower education programs. The study in this area should include:

1. Student-faculty ratios required by various accrediting groups.
2. Current utilization of facilities.
3. Cost of adding new facilities for the various types of programs.
4. Current cost per student for various types of programs for the preparation of students in the health professions and occupations.
5. Financial assistance available or needed for students in the various programs.

V. *Staffing*

The Director of the State Council of Higher Education for Virginia will employ a full time director for the health manpower study. This person must be able to meet specifications outlined in a job description

developed specifically for this position. These include a breadth of appropriate education and experience in research with specific experience in research related to health manpower. The Director of the study will be responsible to the Coordinator for Health Professions and Occupations.

Supportive staff for the study will include a graduate assistant, work-study student and clerical staff. Consultants will be utilized as deemed appropriate. Areas which may be determined to require more indepth study may be contracted out, explored for specific student-faculty projects in colleges/universities or explored with other state agencies.

A Technical Advisory Committee composed of persons from the national and state levels will be established to advise the Director on the technical aspects of the study.

VI. *Summary*

The State Council of Higher Education for Virginia has a major responsibility in planning for the preparation of health manpower in sufficient supply and with the appropriate level of education to meet Virginia's health care needs. The Council and its advisory Committee on Education for Health Professions and Occupations recognizes the necessity of making informed decisions based on sound data in assuming this responsibility. The General Assembly of Virginia has provided the State Council with means to develop a method for collecting the necessary information through its appropriation of funds to support a study of health manpower.

When all of the information has been gathered, there should be a picture of the state of Virginia as a whole and for its localities on the total requirements, the total supply, and the net shortage by occupations, space and time dimensions. Estimates by occupation of the shortage or surplus, trouble spots and other information may be identified. This data base will be presented to the Committee on Education for Health Professions and Occupations for use in the development of policy recommendations which may require expansion, modification, shift, reducing or otherwise changing the direction of educational programs for each occupation. These will be the policy guideposts for educational planning for health professions and occupations and occupations which will determine the goals and directions for education of health personnel. The State Council of Higher Education can then be provided with recommendations for implementing a plan for the education of personnel for the health care delivery system.

Systems analysis will become an essential part of this study at this point. After goals have been established, the information should be analyzed occupation by occupation and geographically. A close look at migration factors should be made. If out-migration is a problem, for the State as a whole or for particular local areas, then efforts should be made to determine a possible solution. An analysis of specific kinds of problems of providing education for each occupation can be made.

In examining the policy through the systems analysis approach, the following steps must be followed:

1. Set goals
2. Determine various alternative policies to achieve goals
3. Examine each alternative in terms of pros and cons and an analysis of the cost-benefit relationship.

In offering policy recommendations some analysis of problems in implementation may need to be considered, such as estimates of the total costs and results, the total time it would take, when particular things should be done, the allocation of responsibility for implementation and when the goals might be achieved. These might be approached in conjunction with network analysis or other systems approaches or through more conventional analytical procedures. The important thing is to be sure that the study has done the following: (a) considered all significant problems in terms of all relevant dimensions; (b) kept in mind the principle of identifying priority problems or needs, and apportioning time and resources accordingly; (c) tried to foresee the way in which the Committee, Council, Governor, Assembly or other authorities will want to have the information assembled, analyzed, and presented.

APPENDIX 3B

Report of Manpower Study of the State Council on Higher Education.

SELECTED HEALTH OCCUPATIONS TO BE STUDIED

The following eight pages include a listing of health occupations according to four different and tentative priority levels. The explanation of the four priorities follows:

Priority I: Data will be collected during the 1973-74 study period and estimates of health manpower requirements will be developed.

Priority II: Data will be collected during the 1973-74 study period. Estimates of health manpower requirements will be made for these occupations if time permits.

Priority III: Data will be collected during the 1973-74 study period. No attempt will be made to estimate the health manpower requirements for these health manpower occupations.

Priority IV: No data will be collected during the 1973-74 study period. No attempts will be made to estimate the requirements for these occupations

Selected Health Occupations by Priority

Priority I

NO.	*OCCUPATION*	*DEFINITION*
1.01	Physicians	Physicians — Persons who have successfully completed the required education and are licensed to practice in Virginia.
2.02	Dental Services	Dentists Persons who have successfully completed the required education and are licensed to practice in Virginia.
2.02	Dental Services	Dental Hygienists — Graduates of an accredited School of Dental Hygiene currently licensed, or eligible for licensure to practice dental hygiene.
2.03	Dental Services	Dental Assistants — Persons who assist at chairside, including such activities as mixing, filling materials, cleaning and sterilizing instruments, and exposing and processing X-ray film.
2.04	Dental Services	Dental Laboratory Technician Persons who work under the direction of a Dentist to construct dentures and other dental restorations.
3.02	Clinical Laboratory Services	Medical Technologists — Persons with a Baccalaureate or higher degree who have requirements for certification as a Medical Technologist (AMT or ASCP) and who perform chemical, microscopic, bacteriologic and related tests.
6.01	Nursing Services	Registered Nurses — Graduates of an approved School of Nursing who are currently licensed to practice. Does not include those persons placed more appropriately in other categories.
6.02	Nursing Services	Licensed Practical Nurses — Persons working under supervision of professional nurses and/or Schools of Practical Nursing and who are licensed to practice, and who are granted or licensed by waiver on the basis of experience and endorsement. Does not include those persons placed more appropriately in other categories.
7.01	Pharmacy	Pharmacists — Persons licensed by the State Board of Pharmacy to practice the profession in Virginia.

Priority I — Continued

NO.	*OCCUPATION*	*DEFINITION*
8.01	Radiologic Technology	Radiologic Technologists — Persons responsible for using X-ray and fluoroscopic equipment for diagnostic or therapeutic purposes, under the direction of a physician.
9.03	Therapeutic Services	Physical Therapists — Persons licensed to apply techniques and treatments to restore physical function and prevent disability.
9.04	Therapeutic Services	Physical Therapy Assistants — Persons licensed to work under the direction of a physical therapist.
11.01	Other Health Professional and Technical	Osteopaths — Persons who are licensed to practice osteopathy.
11.03	Other Health Professional and Technical	Optometrists — Persons licensed by the State who diagnose vision defects and prescribe and fit corrective lenses.

Selected Health Occupations by Priority

Priority II

NO.	*OCCUPATION*	*DEFINITION*
5.01	Medical Record and Library Services	Medical Record Librarians — Persons responsible for planning, organizing, supervising and maintaining systems of medical records.
5.02	Medical Record and Library Services	Medical Librarians — Persons who organize and administer library service for staff.
5.03	Medical Record and Library Services	Medical Record Technicians — Persons who assist medical record librarians in carrying out technical work.
9.08	Therapeutic Services	Inhalation Respiratory Therapists — Persons who use skills and equipment to attempt to restore normal function to the respiratory system.

Selected Health Occupations by Priority

Priority III

NO.	*OCCUPATION*	*DEFINITION*
3.03	Clinical Laboratory Services	Medical Laboratory Technicians — Persons qualified through general and technical education to perform a high percentage of medical laboratory test procedures.
3.04	Clinical Laboratory Services	Cytotechnologists — Technicians specifically trained and certified to search for abnormalities in human cells.
3.06	Clinical Laboratory Services	Certified Laboratory Assistants — Persons with a high school diploma plus a twelve month training course in a school approved by the American Medical Association, who performs the more routine laboratory tests under supervision.
4.01	Dietary Services	Dietitians — Persons with at least a Baccalaureate level preparation in foods and nutrition or institutional management and met the educational requirements to become registered as a Dietitian.
4.02	Dietary Services	Dietary Technicians — Persons not in 4.01 who are responsible for food service planning and administration, or who assist in planning menus and help supervise the preparation and service of meals.
4.03	Dietary Services	Food Service Managers — Persons responsible for food service administration, and designated as heads of the Food Service Departments.
7.02	Pharmacy	Pharmacy Technicians — Persons who are trained to perform certain details under the direction of a Pharmacist.
	Radiologic Technology	Radiologic Technicians —
8.02	Radiologic Technology	Nuclear Medical Technologists — Persons certified responsible for operating specialized equipment that traces or measures radioactivity and assist the physician in administering radioisotopes.

NO.	*OCCUPATION*	*DEFINITION*
8.03	Radiologic Technology	Radiation Therapy Technologists — Persons responsible for operating radiation producing devices to administer therapeutic treatments as prescribed by the Radiologists.
9.01	Therapeutic Services	Occupational Therapists — Persons who select and direct physical, educational, social and daily living activities designed to meet specific needs of mentally or physically disabled patients.
9.02	Therapeutic Services	Occupational Therapy Assistants — Persons certified who work under the directions of an occupational therapist.
9.05	Therapeutic Services	Speech Pathologist and Audiologist — Therapists licensed to evaluate and treat speech and hearing disorders.
9.06	Therapeutic Services	Recreation Therapists and Aides — Persons who develop or supervise programs involving sports, crafts, and other recreational activities for patients.
9.07	Therapeutic Services	Cardiopulmonary Technician — Persons who assist doctors in analysis and therapeutic care of the heart-lung system.
9.11	Therapeutic Services	Mental Health Associate (Technician) — Persons who assist in providing care for patients in mental health agencies; working with individuals and groups of patients in therapeutic sessions and interviewing patients and their families.
9.13	Therapeutic Services	Prosthetics and Orthotics Technicians — Persons who assist with the supplying and fitting of artificial legs, eyes, teeth or other parts of the body.
10.01	Other Health Professional and Technical	Hospital Administrators and Assistants — Persons responsible for the overall administrative and executive functions for the Hospital. (Educational requirements)
10.02	Other Health Professional and Technical	Medical Secretaries — Secretaries with special education or training designed to help function in a health setting.

NO.	*OCCUPATION*	*DEFINITION*
10.03	Other Health Professional and Technical	Surgical Technical Aides — Persons who assist, under professional nurse supervision, in the care of patients and equipment in the operating or delivery room.
10.04	Other Health Professional and Technical	Physician's Aides (Medical Assistants) — Persons, other than nurses, with specialized but limited skills in one or more areas of medical practice, who assist physicians or nurses in the care and treatment of patients.
10.05	Other Health Professional and Technical	Electrocardiographic Technicians — Persons who observe and record patterns of heart function.
10.06	Other Health Professional and Technical	Electroencephalograph Technicians — Persons who observe and record brain wave patterns.
10.07	Other Health Professional and Technical	Electromyography Technicians — Persons who assist doctors in recording and analyzing bioelectric potentials which originate in muscle tissue.
10.08	Other Health Professional and Technical	Emergency Attendants — Persons who assist with duties in emergency health situations including care in transport to Hospitals.
3.07	Other Health Professional and Technical	Blood Bank Technologists — Persons who assist pathologists in testing and detecting any of the factors that may inhibit transfusion of blood from one person to another.
10.10	Other Health Professional and Technical	Medical Engineering — Persons engaged in research and utilization of engineering ideas, skills, and techniques to improve medical care, including diagnosis, surgery, and rehabilitation.
10.12	Other Health Professional and Technical	Dispensing Opticians — Persons who fit, supply, and adjust eyeglasses according to prescriptions written by opthalmologists or optometrists.
10.13	Other Health Professional and Technical	Optometric Technicians — Persons who perform office and laboratory tasks under the direction of an Optometrist.

NO.	*OCCUPATION*		*DEFINITION*
10.14	Other Health and Technical	Professional	Sanitarians — Persons responsible for controls to environment to protect health, safety and well being of the population.
10.14	Other Health and Technical	Professional	Environmental Technicians — Persons who assist sanitarians in carrying out services, survey, inspections and investigations.
10.16	Other Health and Technical	Professional	Veterinarians — Persons who treat sick and injured animals, give advice regarding the care and breeding of animals and help prevent the outbreak and spread of diseases among them which could affect the health of man.
11.02	Other Health and Technical	Professional	Podiatrists — Persons licensed by the State who diagnose and treat diseases and deformities of the feet.
11.04	Other Health and Technical	Professional	Clincial Psychologists — Persons licensed by the State to practice Clinical Psychology.
11.05	Other Health and Technical	Professional	Chiropractors — Persons licensed by the State to practice Chiropractic.
	Other Health and Technical	Professional	Biomedical Engineering
	Other Health and Technical	Professional	Physicians Assistants
	Other Health and Technical	Professional	Nurse Practitioners
	Other Health and Technical	Professional	Nursing Home Administrators or Extended Care Administrators

Selected Health Occupations by Priority

Priority IV

NO.	*OCCUPATION*	*DEFINITION*
3.01	Clinical Laboratory Services	Clinical Laboratory Scientists — Persons with a graduate degree in one of the natural sciences who performs various laboratory tests includes Bioanalyst, Cytologists, Embryologists, Histologists, Clinical Chemists, Microbiologists.
5.04	Medical Record and Library Services	Medical Record Clerks — Persons who perform clerical and typing operations which require knowledge of medical record systems.
6.03	Nursing Services	Hospital Unit Managers — Persons who supervise the non-nursing activities of the Unit, including supplies, schedules, routine reports, reception of patients and families.
6.04	Nursing Services	Ward Clerks — Persons who perform clerical services in the patient-care units or nursing units, usually serving as receptionists.
9.09	Therapeutic Services	Social Workers — College graduates licensed with the State whose work is concerned with serious social problems of patients and their families.
9.12	Therapeutic Services	Corrective Therapists — Persons with a Baccalaureate degree in Physician Education plus Clinical experience.
9.10	Therapeutic Services	Social Work Assistants and Aides — Persons who work under the direction of a Social Worker.
10.11	Other Health Professional and Technical	Hospital Central Service Technician — Operates ultrasonic cleaners, autoclaves, and sterilizers; performs aseptic cleaning techniques, and receives and distributes cleaning supplies.

HEALTH MANPOWER STUDY TASK FORCES

The State Council by itself does not possess the unique talents or experience that will make such a study successful. Therefore, the State Council is developing a number of task forces to assist in the development of the data bank and the development of health manpower planning models for the next several decades.

The members of these task forces will be asked to provide assistance in the areas of the health care delivery system in which they are most familiar. They will be asked to provide estimates of what they think and expect the health care delivery system to be, vis-a-vis, their work and the health system over the next several decades. The task forces will be asked to provide insights into the following:

A. The kinds of technological change that will occur in the health manpower educational system.

B. The extent to which computers and other labor saving devices will be utilized in the development and delivery of health care services.

C. Identification of new technologies that might assist in the provision of health care services to patients.

D. Expected changes that will occur in the utilization of health manpower.

E. Insights into both emerging and possibly new health occupations in the future.

This information is essential for developing meaningful health manpower and health manpower educational plans for the Commonwealth of Virginia.

The task forces that will be formed are listed below:

Advisory
Allied Health
Delphi
Dentist
Health Facilities
Nursing
Optometrist
Pharmacist
Physician
Technical

APPENDIX 4

Primary Physician Manpower in Virginia, 1972; Present Supply and Future Need.

PRIMARY PHYSICIAN MANPOWER IN VIRGINIA
1972
PRESENT SUPPLY AND FUTURE NEEDS

Fitzhugh Mayo, M.D.
November 20, 1972

PRIMARY PHYSICIAN MANPOWER IN VIRGINIA

1972

PRESENT SUPPLY AND FUTURE NEEDS

Most physician manpower studies are based on estimates of total numbers of physicians per unit of population. Since it is possible to have ample numbers of secondary and tertiary care physicians and simultaneously have a shortage of primary care physicians, manpower estimates for primary care obviously must be separated from the whole. No lucid exposition of this problem is likely to occur until this separation is made.

Purpose and Methodology

This study has been designed to document as nearly as possible the actual numbers of primary physicians practicing in each geographic subdivision of the State of Virginia. Tabulations have been made by counties and cities, by planning districts and by regions. Rosters of physicians practicing in each area have been compiled by name and date of birth. Certain approximations were necessary as there is some blurring in the actual proportion of time some physicians spend in primary care. The following assumptions were made:

1) General internists, pediatricians, and general or family practitioners were assumed to be full-time primary care physicians. (It is recognized that many general internists serve as referral physicians for secondary care; however, this is probably offset by primary care delivered by other specialists in the community.)

2) Subspecialists in internal medicine were assumed to be half-time primary care physicians. (Obviously, this is an over-estimate of time spent in primary care; however, this is offset by house officers working under these subspecialists but not included in the survey).

3) Physicians who had reduced work loads because of age or illness were listed as half-time in primary care. (The percentage of time actually practicing varies considerably and the fifty percent assumption is taken as an average).

4) Military physicians were listed as half-time primary physicians since the primary physician/patient population ratio in the services is approximately double that of the civilian population.

Present Deficits

Ratios of primary physicians to population have been calculated for each political subdivision. Considerable variation in primary physician density is evident for different planning districts and regions: (1) Some rural areas such as the Shenandoah Valley are much better served than the metropolitan area of Southern Tidewater; (2) The southern tier of counties and planning districts have the lowest densities of primary physicians; (3) Southwest Virginia, Southern Piedmont, Southside Virginia and Southern Tidewater have the poorest ratios together with scattered areas in Northern Piedmont and Central Virginia; (4) There are two counties with no physicians at all. There are fifty-four counties which have no pediatricians or general internists and which would have no physicians except for general or family practitioners.

FUTURE DEFICITS

Future deficits in 1980 and 1990 have been predicted on the basis of present supply, attrition rates based on age of present physician population, and population changes predicted by the Virginia Census Bureau.

A ratio of one primary physician to a patient population of 2500 persons was chosen as a tentative goal for each area of the state for 1990. It is recognized that opinions will vary regarding an optimum ratio, however no rational development of an adequate health care system can be contemplated without a specific goal. A ratio of one primary physician to 2500 patients lies at the median of the ratios established by Western countries with developed health care delivery systems. Denmark has a ratio of 1/2200, England has 1/2700, and all others seem to fall between 1/2200 and 1/3000. Closed panel systems in this country which include defined patient populations also have established ratios in this range. We feel that a ratio of 1/2500 is a reasonable starting point and can be amended appropriately in the future.

Based on the factors mentioned above it is obvious that although some rural areas have the most desperate need, all areas of the state will require substantial numbers of new physicians in primary care, and the Tidewater and Northern Virginia metropolitan complexes together account for approximately half of the total needs in the Commonwealth.

CONCLUSIONS

These data will hopefully be helpful to:

1) *The medical schools* in planning new programs to produce primary care physicians. Location of new programs as well as numbers produced may be related to the specific communities in need. These figures indicate that total numbers needed in the state (111) for all forms of primary care represent a reasonable goal within the existing system of medical education.

2) *Physicians planning to locate practices in the Commonwealth of Virginia.* Data comparing needs of communities has been unavailable in the past.

3) Admissions committees in the medical schools as an aid to locating candidates from the areas of the state with the greatest documented shortages.

4) *Those national and state bodies concerned with the logistics of health care delivery.* Data such as these on a nationwide basis will allow more specific goals in terms of numbers. Nebulous concepts such as percentages of total physicians produced may then be discarded.

LEE COUNTY

Family Practitioners

Ewing
Johnson, James B. (B.1926)

Jonesville
Ely, Thomas S. (B.1914)
Ewing, Nat C. (B.1913)
Hines, Ben H. (B.1920)

Pennington Gap
Gabriel, Daniel (B.1911)
Kinser, Henry A. (B.1922)

Rose Hill
Owens, Beryl H. (B.1926)

General Internists

Pediatricians

SCOTT COUNTY

Family Practitioners

Gate City
None

Nickelsville
Miller, Jerry Lee (B.1940)

Weber City
Adkins, Bruce R. (B.1932)
Hampton, H. M. (B.1931)

General Internists

Pediatricians

WISE COUNTY

Family Practitioners

Appalachia
Handy, Frank E. (B.1894)
Porter, Jesse J. (B.1910)

Big Stone Gap
Sutherland, George F. (B.1916)
Fleenor, L. J., Jr. (B.1940)
Ford, Michael B.

Coeburn
Toothman, Clara Jane (B.1940)

Pound
Santurian, Maurice M. (B.1909)

St. Paul
None

General Internists

Pediatricians

Wise

Henry, James Spencer (B.1920)
Nakandakari, Masao (B.1928)
Sewell, Sidney R. (B.1934)
Showalter, Samuel G. (B.1943)

Buckanan, John C. (B.1911)
Han, Sung Taik (B.1930)

Fuller, Charles Irving (B.1921)
Maphis, Frederick D., Jr (B.1915)
Timp, Leo Frederick (B.1920)

NORTON COUNTY

Family Practitioners

Bond, Albert H. (B.1909)
Booth, Fred Stone (B.1930)
Dellinger, John H. (B.1910)
Ingram, Lewis K. (B.1923)

General Internists

Onder, Mehmet Hami (B.1925)

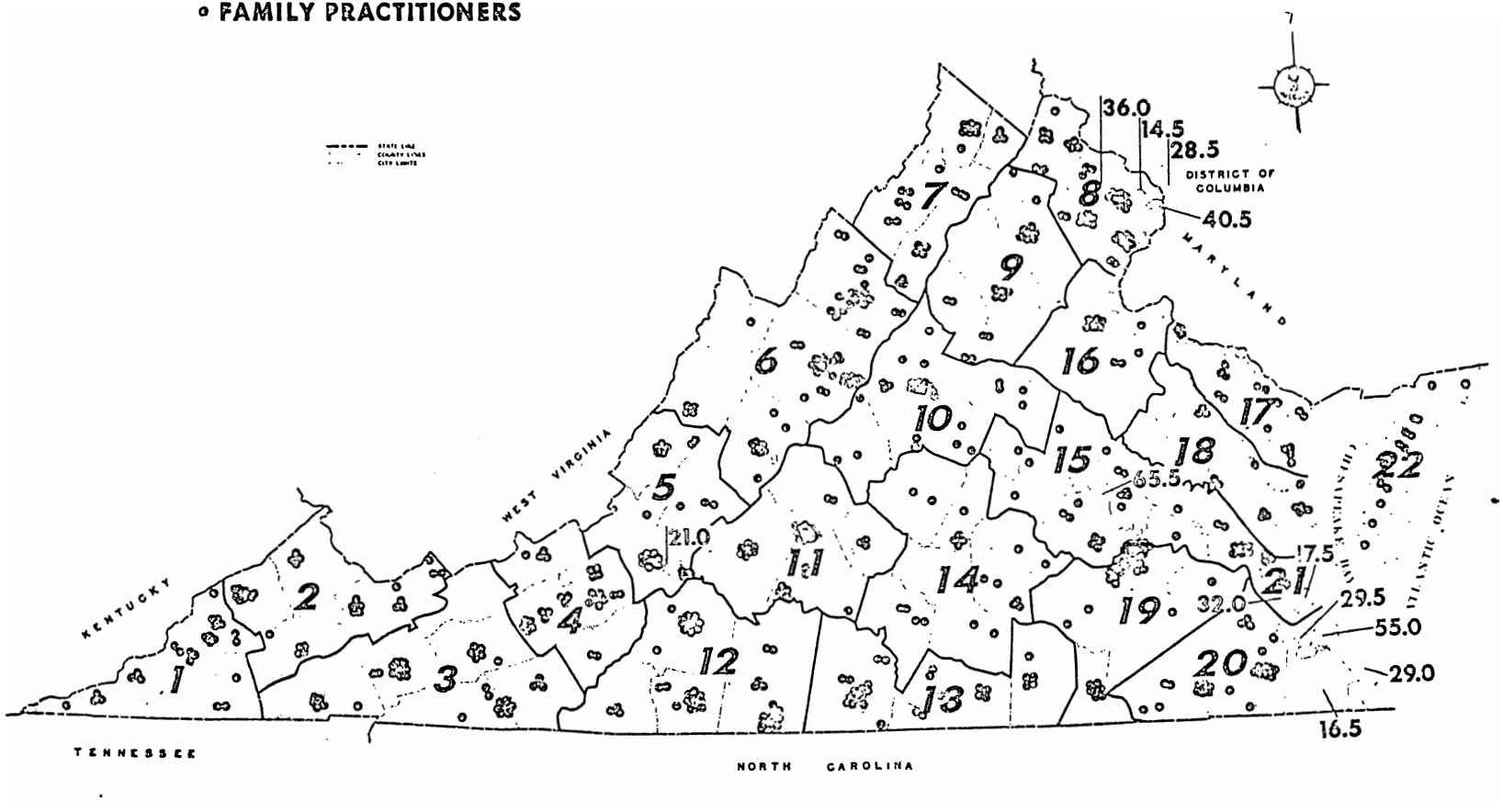
Pediatricians

Salcedo, Luis (B.1924)

COMMONWEALTH OF VIRGINIA

PRIMARY PHYSICIAN SUPPLY 1972

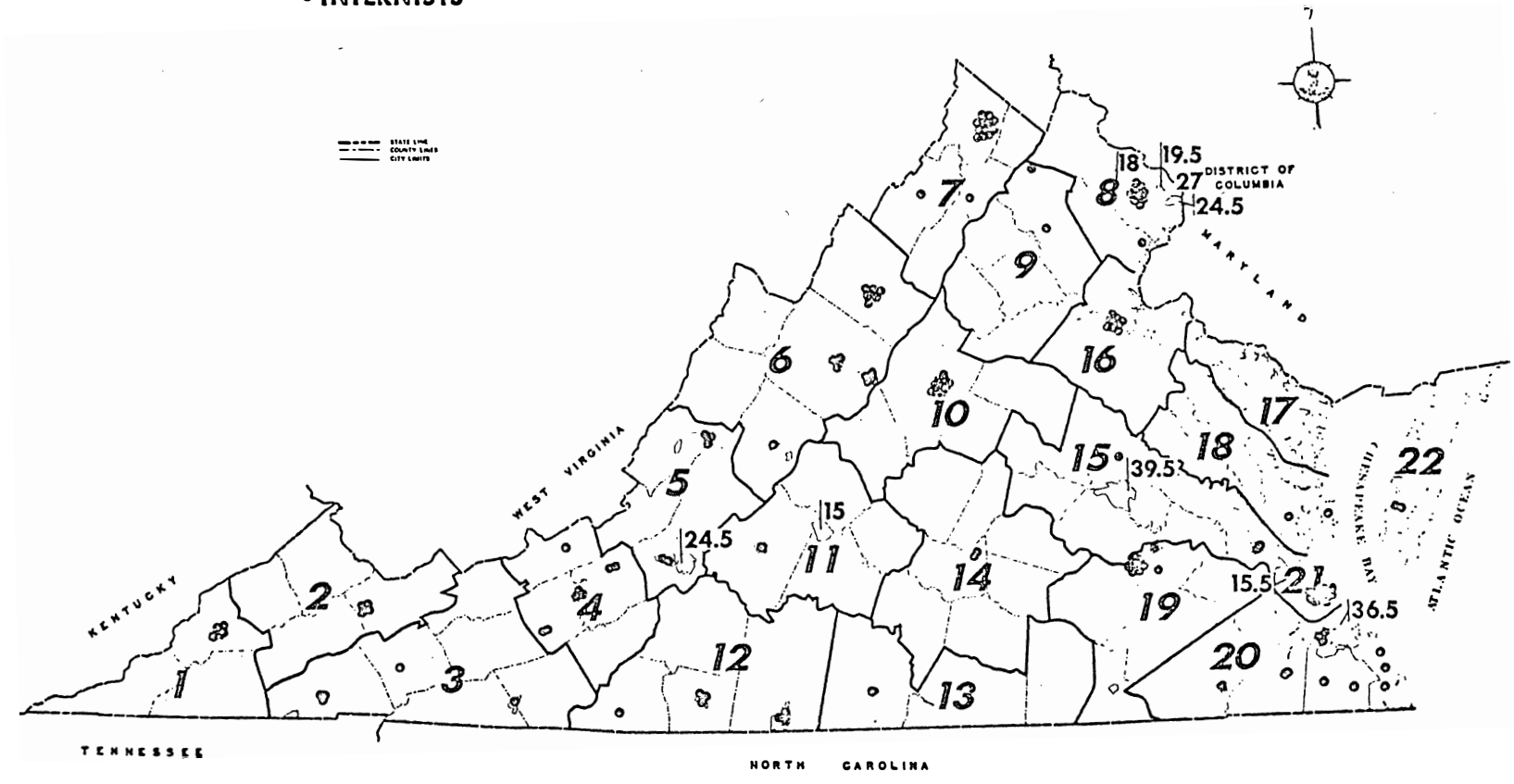
o FAMILY PRACTITIONERS



COMMONWEALTH OF VIRGINIA

PRIMARY PHYSICIAN SUPPLY 1972

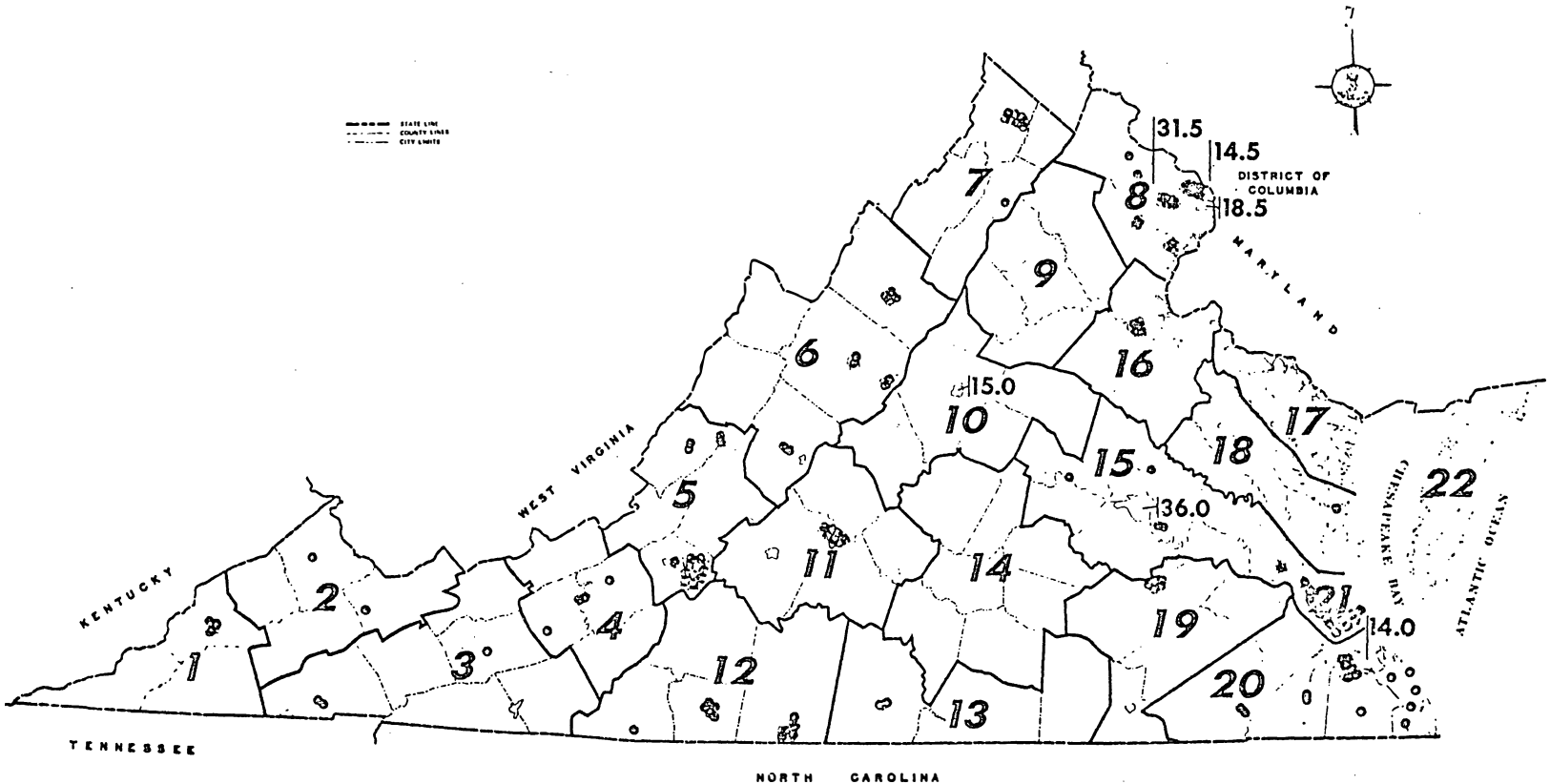
• INTERNISTS



COMMONWEALTH OF VIRGINIA

PRIMARY PHYSICIAN SUPPLY 1972

∘ PEDIATRICIANS



PLANNING DISTRICT #1

1970

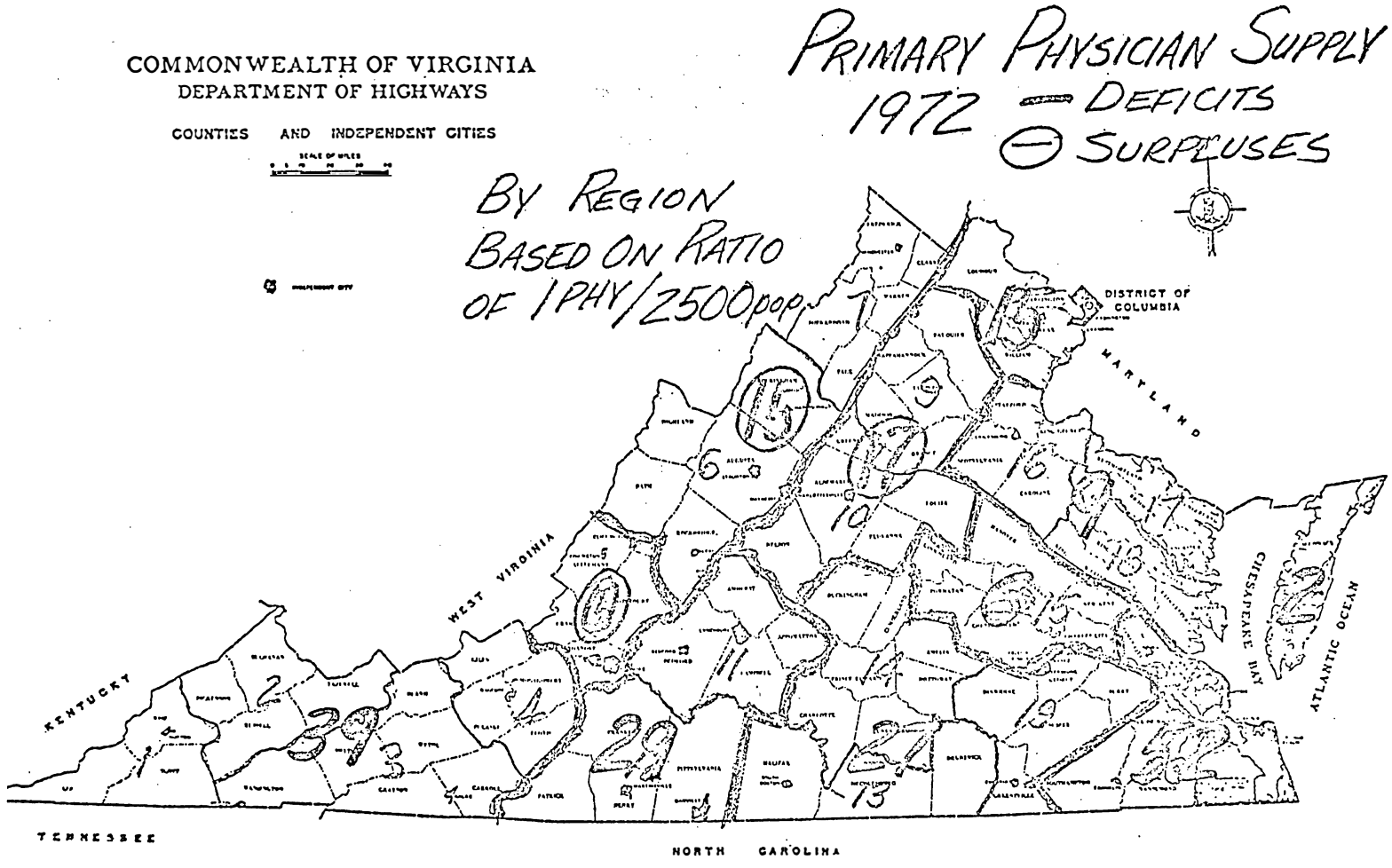
LOCATION	POPULATION	PP's NEEDED	ACTUAL PP's GP	INT	PED	TOTAL	DEFICIT	PP/POP RATIO
Lee Co.	20,321	8	7	-	-	7	-1	1/2900
Scott Co.	24,376	10	3	-	-	3	-7	2/8000
Wise Co.	35,947	14	11	2	3	16	+2	1/2000
Norton City	4,001	2	4	1	1	6	+4	1/1000
TOTAL	84,645	34	25	3	4	32	-2	1/2670

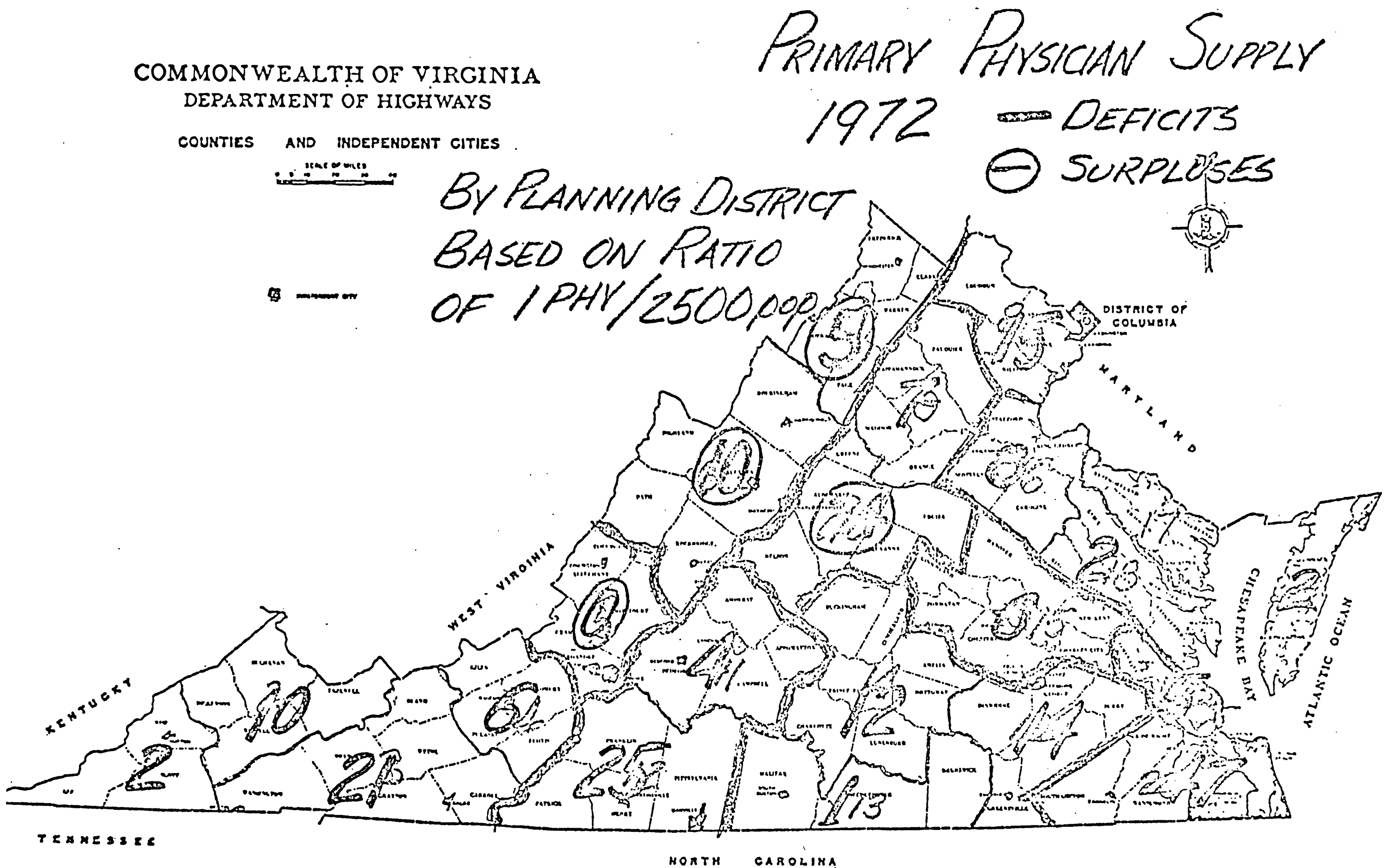
1980

LOCATION	POPULATION	PP's NEEDED	ACTUAL PP's GP	INT	PED	TOTAL	DEFICIT	PP/POP RATIO
Lee Co.	17,000	7	4	-	-	4	*-3*	N/A
Scott Co.	23,800	10	3	-	-	3	*-7*	N/A
Wise Co.	30,400	12	8	1	3	12	*0*	N/A
Norton City	3,600	1	2	1	1	4	+3	N/A
TOTAL	74,800	30	17	4	2	23	-7	N/A

1990

LOCATION	POPULATION	PP's NEEDED	ACTUAL PP's GP	INT	PED	TOTAL	DEFICIT	PP/POP RATIO
Lee Co.	15,000	6	2	-	-	2	-4	N/A
Scott Co.	24,000	10	3	-	-	3	-7	N/A
Wise Co.	27,500	11	6	1	1	8	-3	N/A
Norton City	3,500	1	1	1	-	2	+1	N/A
TOTAL	70,000	28	12	2	1	15	-13	N/A


COMMONWEALTH OF VIRGINIA
DEPARTMENT OF HIGHWAYS
COUNTIES AND INDEPENDENT CITIES
PRIMARY PHYSICIAN SUPPLY
1972 — DEFICITS
⊖ SURPLUSES
BY REGION
BASED ON RATIO
OF 1 PHY/2500 POP
DISTRICT OF COLUMBIA
MARYLAND
WEST VIRGINIA
KENTUCKY
TENNESSEE
NORTH CAROLINA
CHESAPEAKE BAY
ATLANTIC OCEAN


COMMONWEALTH OF VIRGINIA
DEPARTMENT OF HIGHWAYS
COUNTIES AND INDEPENDENT CITIES
PRIMARY PHYSICIAN SUPPLY
1972
DEFICITS
SURPLUSES
BY PLANNING DISTRICT
BASED ON RATIO
OF 1 PHY/2500 POP
DISTRICT OF COLUMBIA
MARYLAND
WEST VIRGINIA
KENTUCKY
TENNESSEE
NORTH CAROLINA
CHESAPEAKE BAY
ATLANTIC OCEAN

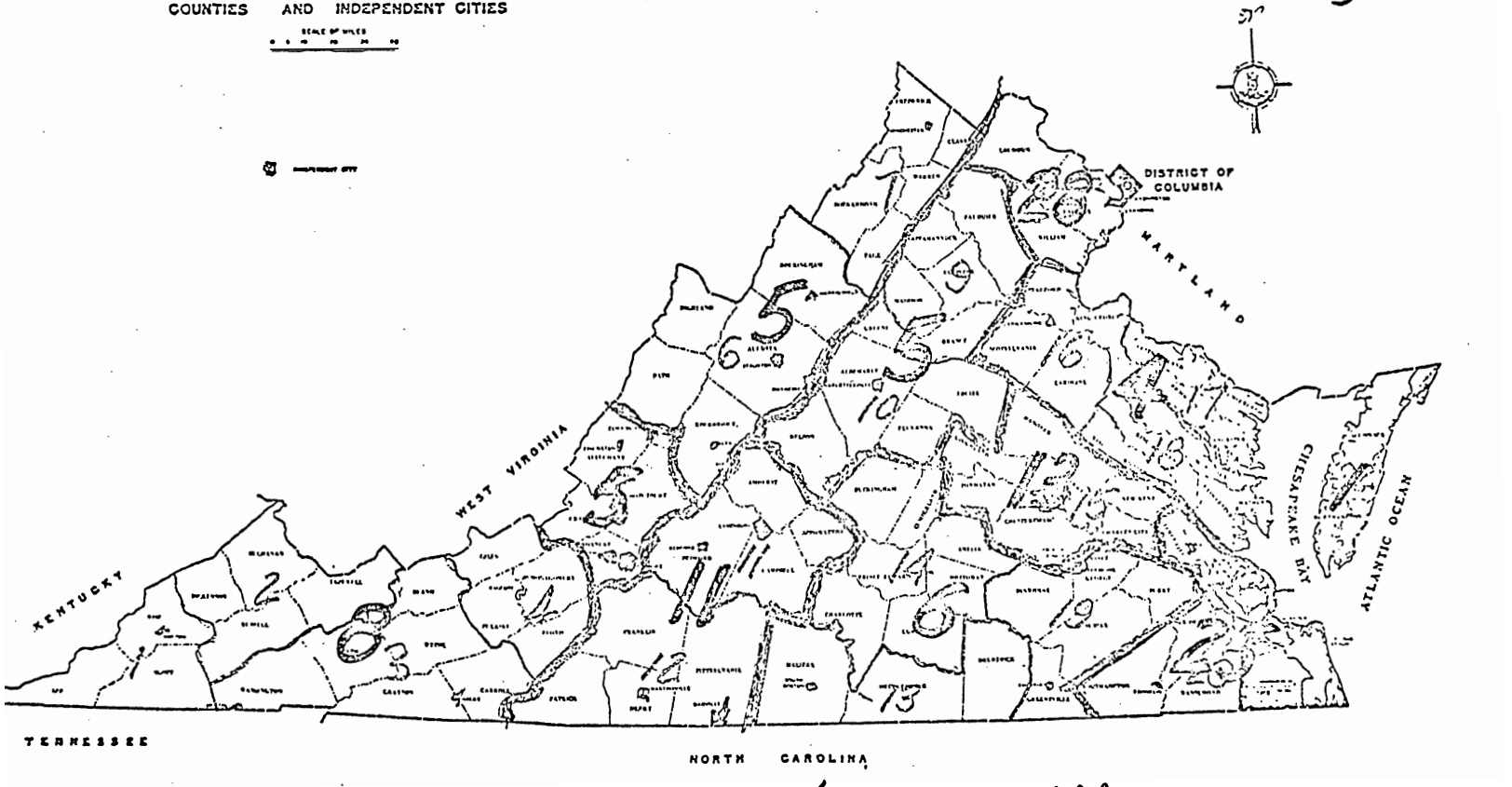
PRIMARY PHYSICIAN SUPPLY
COMMONWEALTH OF VIRGINIA

Planning District	1990 Deficit	Region	Primary Physicians Per Year to Reach Ratio of 1/2500 pop. by 1990
1	13		
2	24		
3	51		
4	42		
	130	Southwest Virginia	8
5	79	Roanoke Valley	5
6	56		
7	26		
	82	Shenandoah Valley	5
8	460	Northern Virginia	28
9	33		
10	43		
	76	Northern Piedmont	5
11	82		
12	101		
	183	Southern Piedmont	11
13	23		
14	18		
19	59		
	100	Southside Virginia	6
15	212	Richmond Area	13
16	33		
17	13		
18	17		
	63	Northern Tidewater	4
20	275		
21	124		
	399	Southern Tidewater	25
22	10	Eastern Shore	1
		TOTAL STATE OF VIRGINIA	111

PRIMARY PHYSICIANS NEEDED PER YEAR TO REACH GOAL OF 1 PHY. / 2500 POP. by 1990

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF HIGHWAYS

COUNTIES AND INDEPENDENT CITIES



TOTAL PER YEAR: 111

APPENDIX 5

Report of the Committee on Graduate Medical Education.

Relationship of Graduate Medical Education

Two landmark reports have indicated our direction.

The Millis Commission Report called in 1966 for "corporate responsibility" for graduate medical education. Medical centers were asked to assume responsibility for standards and coordination of this vital portion of medical education.

"We therefore recommend that graduation from medical school be recognized as the end of general medical education, and that specialized training begin with the start of graduate medical education."

"University medical centers should be among the pioneers — in developing corporate responsibility for residency training and in initiating new programs of basic residency training."

This concept was extended by the Carnegie Commission Report on Higher Education and the Nation's Health.

"The Commission recommends that states should continue to provide substantial financial support for medical and dental education — and major financial support for house officer (graduate medical) training. The states, in cooperation with Universities and with regional and local planning bodies, should also play a major role in the development of plans for the location of university health science centers, area health education centers, and comprehensive colleges and community colleges providing training for allied health personnel."

"The Commission recommends that university health science centers should be responsible, in their respective geographic areas, for coordinating the education of health care personnel."

The Health Facilities Subcommittee has an important opportunity to assist health education in hospitals throughout the state, to assist the distribution of health manpower in the state, and to move the Commonwealth of Virginia into the forefront of graduate medical education with the appropriate recommendations to the General Assembly.

Premises

A. The three medical schools in Virginia will be graduating almost adequate numbers of physicians from medical school by 1978.

Medical College of Virginia	168
University of Virginia	126
Eastern Virginia Medical School	24
	318

If the national goal of 15,000 graduates is met by 1978, in proportion to population, Virginia would be expected to graduate 336 medical students annually by 1978. (Based on estimated U.S. population 230MM; Virginia population 5.159MM)

B. The apparent key factor in retaining physicians to practice in any state is the location in which the student receives graduate medical education.

CUMULATIVE FREQUENCY DISTRIBUTION OF FACTORS RELATING STATE OF PRACTICE TO STATE OF GRADUATE TRAINING, MEDICAL SCHOOL AND BIRTH

	Type of Medical School of Graduation		
	Public	Private	Total
Physicians Practicing in State of Graduate Training	66.2%	63.1%	64.6%
Physicians Practicing in State of Medical School of Graduation	56.1	36.0	45.8
Physicians Practicing in State of Birth	47.5	40.7	44.1

C. While it is naive to assume that physicians will not migrate, assumptions should be made on the basis of Virginia and other states each being responsible for and providing for its own health manpower needs.

For all medical school graduates 1955-65, there was substantial migration away from Middle Atlantic, North Central and South Central states, and substantial migration into New England, Mountain, and Pacific states as a percent of local production. The South Atlantic states, including Virginia, experienced the least change with a new migration of -2.5%, based on 7,495 physician graduates (held).

D. Virginia should provide a graduate medical education position for each graduate of its medical schools, these education programs organized under corporate responsibility of the three medical schools.

Education should be a function of the Commonwealth, not supported by the individual sick person, so that the educational component of graduate medical education should be a state responsibility.

Graduate Medical Education

A. Numbers

The average graduate medical education program, based on present distribution, lasts almost four years. Examples: Family Practice, Pediatrics, Anesthesia = 3 years; Psychiatry, Obstetrics-Gynecology = 3 or 4 years; Internal Medicine, Ophthalmology, Otolaryngology, Neurology, Radiology = 4 years; Pathology = 4 or 5 years; General Surgery, Surgical subspecialties, Internal Medicine subspecialties = 5+ years.

Graduate medical education positions provided under the corporate concept should total 318 X 4 years or 1248 positions.

B. Distribution

1. Present Practitioners

The present distribution by field of practice of Virginia physicians is listed in the accompanying Table B, pages 1 and 2. (Federal M.D.'s included.)

The total of 5,591 corresponds closely with the AMA figures of 5,850 total physicians in Virginia on January 1, 1972. There were 4,991 in direct patient care, 437 in teaching and research (5428 versus 5591), and 422 retired or inactive.

Distribution by specialty is taken from the AMA Directory, and represents what a physician himself lists as his special field — not necessarily specialty training or Board certification. The ratios per population (Example: Allergy 1 physician/25,000 people) are those espoused by groups in that field of medicine. Representative existing ratios in the United States are listed in Table C. The HMO ratios per population are based on sampling of the six largest prepaid group practices in the nation. Obviously, it is neither possible nor desirable to have all medical care delivered through Health Maintenance Organization type plans, but the representative figures indicate possibilities of manpower conservation.

Other cautions should be noted. The physician figures for Virginia have at least two distortions. In Northern Virginia, some secondary level medical care and much tertiary level care is provided in the District of Columbia. In the Tidewater area, a substantial amount of health care is provided by military physicians or in military installations, and these physicians are not counted in any figures given.

2. Existing Graduate Medical Education

Existing programs are listed in Table E from the latest AMA report available. Note that there are 239 GM first year (internship) positions in the state, as opposed to the present 250 M.D. annual graduates and the anticipated 318 annual graduates in 1978. Together with the 868 existing residency positions, the total of 1107 positions is not far from the 1272 needed.

The 1971 fill of these positions was 898 with 148 foreign medical graduates (16%) and 750 U.S. graduates. This represents a lower percentage of FMG's than in most areas of the nation. Graduate medical education positions are in increasing demand, and it is certain that a higher percentage of these positions are now filled. The data cannot be compared directly since positions have increased in the past two years. Further, certain of the programs have been weak, and do not attract graduates. Virginia has a "positive balance" of graduate medical students; that is, more U.S. medical school graduates are in educational programs in Virginia than there are graduates of Virginia's two medical schools.

3. Corporate Responsibility

The three medical schools can readily assume corporate responsibility for existing and needed graduate medical education programs. The few programs in the Northern Virginia area are affiliated with District of Columbia medical schools, but could achieve liaison with either MCV or UVA. The University of Virginia has programs in Charlottesville and Roanoke, and could assume Danville. MCV has

programs in Richmond and Newport News. EVMS could assume responsibility for the Norfolk-Portsmouth-Suffolk area. The state mental hospital programs should be under the overall coordination of the medical school psychiatry departments.

4. Future Needs

Report Z of the AMA Board of Trustees speaking to "The Distribution of Physicians by Medical Specialties" was accepted by the House of Delegates in June 1973. Recommendations of that report included:

"1) The need for more primary care physicians should be accepted as fact, even though it is difficult to determine precisely the additional numbers needed at this time.

4) The process of accreditation should not be distorted to regulate access to the various specialties in medicine.

5) AMA should adopt a goal . . . to have at least 50% of all medical graduates enter residency training in primary care specialties.

6) The need for numbers and types of physicians should be monitored continuously and reassessed periodically, and made available to medical students to assist them in choosing a specialty."

In Virginia, there is no suggestion that standards of residency accreditation be varied to increase or decrease numbers of trainees in some field of medicine (see #4 above). Rather, state funding of the educational component of training and medical school responsibility should support appropriate numbers of residency positions to meet Virginia needs.

The best information existing in Virginia, subject to all vagaries of predictive planning, is the report on Primary Physician Manpower drafted by Fitzhugh Mayo, M.D. Assumptions were made that internists, pediatricians and family physicians are full time in primary care and other internal medicine subspecialists are half time in primary care, while other physicians are not counted, and that a ratio of 1 primary physician per 2500 population should be achieved. With these assumptions, 111 new primary care physicians should enter practice in Virginia annually between now and the year 1990. Today this would represent 40% of GM positions.

AMA data note that 40% of practitioners are in primary care fields (including OB-GYN), and about 40% of all residents are in these same fields. There are proportionally more residents than practitioners in Internal Medicine and fewer in Family Practice, but residents in the latter group are increasing.

Data on remaining specialties has been compiled by Dr. Kenneth Blaylock, Assistant Dean for Graduate Medical Education at MCV. Allowing for 3% attrition annually, specialties appearing to require major increases in resident numbers are Family Practice, Internal Medicine, Pediatrics and Psychiatry. Small increases are required in ENT, Eye, Anesthesia, OB-GYN and Physical Medicine, and in the supraspecialties of Pediatric Neurology and Allergy. No expansion of residencies is required in other fields.

PRIMARY CARE RESIDENCIES IN VIRGINIA

I. To meet desired ratio of 1 primary care physician per 2500 population in 1990, Dr. Fitzhugh Mayo's study indicated a need to produce 111 new primary care physicians annually until 1990.

	Present	*Finishing 1978*
Family Practice		
MCV	24	30
UVA	15	20
EVMS	10	6
	39	56
Pediatrics		
MCV	8	9
UVA	3	6
EVMS	3	3
	14	18
Internal Medicine		
MCV	20	24
UVA	3	12
EVMS	3	3
	26	39
TOTAL	79	113
NEEDED	111	111

Data for 1978 presumes increased state authorization.

II. Contacts with several individuals around the U.S. who should be knowledgeable disclose Kansas paying $9,000 per resident to each hospital (estimated cost $5.5 million), and a Michigan proposal to pay educational costs (not stipends) of residents at $3,000 per position across the state. (Estimated cost $8.5 million.) Neither state has addressed need by type of physician.

The final recommendations of this subcommittee are as follows:

1. All health manpower studies such as the several VALC's, the Virginia Board of Medicine, and the Medical Society of Virginia should be coordinated under the State Council of Higher Education Manpower Study.

2. The State Council of Higher Education Manpower Study should complete its first phase before attempts at identification of needed community resources are made.

3. The three medical educational institutions in the state, in cooperation with community hospitals and the State Council of Higher Education, should assume corporate leadership and responsibility for developing appropriate approved graduate medical opportunities in the Commonwealth.

4. There should be adequate graduate medical education positions in Virginia to at least accommodate graduates from Virginia's medical schools.

5. A minimum of 111 graduate medical positions per year, or 50% of the total positions per year, whichever is larger, should be provided in primary physician fields (family practice, internal medicine, pediatric). There are presently 79 such positions available.

6. Direct state appropriations should support these primary physician graduate medical education positions, including the existing family practice programs at maximum proposed levels, plus additional positions in other primary care fields at three years for each position. Support should be full base stipend plus educational costs to the supporting health education unit.

7. Graduate medical education positions in psychiatry should be coordinated between the medical schools and the Department of Mental Health and Mental Retardation. Support should be provided 75% by the Department and 25% by the sponsoring school.

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TABLE B-1

HEALTH MANPOWER IN VIRGINIA

-1-

	Have in Va.	Should have in Va.	Should have 1980	HMO Should have	HMO Should have 1980
ALLERGY 1/25,000 HMO - 1/50,000	21	180	216	90	108
CARDIOLOGY 1/25,000 HMO - 1/45,000	89	180	216	100	120
DERMATOLOGY 1/40,000 HMO - 1/34/642	61	112	135	130	156
GASTROENTEROLOGY 1/50,000 HMO - ?	21	90	108		
NEUROLOGY 1/60,000 HMO - 1/129,333	57	75	90	35	42
NEUROSURGERY 1/100,000 HMO - 1/132,877	59	45	54	34	41
ANESTHESIOLOGY 1/14,000 HMO - 1/31,290	142	321	386	144	173
OB-GYN 1/11,000 HMO - 1/10,430	355	409	492	431	519
OPHTHALMOLOGY 1/20,000 HMO - 1/32,333	136	225	270	139	167
ORTHOPEDIC SURGERY 1/25,000 HMO - 1/22,045	123	180	216	204	245
OTOLARYNGOLOGY 1/25,000 HMO - 1/42,174	103	180	216	107	128

Based on 4,500,000 population in Virginia
Based on 5,416,000 population in Virginia 1980

TABLE B-2

HEALTH MANPOWER IN VIRGINIA

		Have in Va.	Should Have in Va.	Should Have 1980	HMO Should Have	HMO Should Have 1980
PATHOLOGY HMO - 1/64,238	1/20,000	175	225	270	70	84
FAMILY PRACTICE HMO - 1/8,435	1/2,000	1,150	2,250	2,708	533	542
GENERAL SURGERY HMO - 1/13,288	1/10,000	556	450	541	339	408
INTERNAL MEDICINE HMO - 1/3,244	1/5,000	1,450	900	1,083	1,387	1,670
PEDIATRICS HMO - 1/6,101	1/10,000	321	450	541	738	888
PSYCHIATRY HMO - 1/48,500	1/10,000	346	450	541	93	112
PLASTIC SURGERY HMO - 1/485,000	1/50,000	29	90	108	9	11
PULMONARY HMO - ?	1/100,000 33	45	54			
RADIOLOGY HMO - 1/27,714	1/15,000	212	300	361	162	195
THORACIC SURGERY HMO - ?	1/100,000	23	45	54		
UROLOGY HMO - 1/69,286	1/30,000	117	150	181	65	78
	TOTALS	5591	7361	8787	4810	

Based on 4,500,000 population in Virginia
Based on 5,416,000 population in Virginia 1980

TABLE C

MEDIAN AND AVERAGE PHYSICIAN-POPULATION RATIOS FOR 20 SPECIALTIES

Specialty	Median Physician-Population Ratios	Average Physician Population Ratios
Anesthesia	1:29,444	1:20,214
Dermatology	1:72,000	1:57,191
Family Practice	1:3,459	1:3,592
General Surgery	1:8,223	1:7,554
Internal Medicine	1:6,333	1:4,474
Neurology	1:125,000	1:86,557
Neurosurgery	1:104,166	1:86,803
Obstetrics-Gynecology	1:14,299	1:11,915
Ophthalmology	1:26,129	1:22,200
Orthopedics	1:26,538	1:23,462
Otolaryngology	1:48,552	1:41,619
Pathology	1:30,286	1:23,854
Pediatrics	1:17,000	1:12,795
Plastic Surgery	1:188,000	1:135,666
Psychiatry	1:16,730	1:10,358
Rehabilitation	1:278,571	1:159,343
Radiology	1:19,286	1:16,680
Urology	1:43,800	1:37,850
Colon & Rectal Surgery	1:213,636	1:316,694
Thoracic Surgery	1:182,500	1:126,126

Taken from JAMA, March 20, 1972 - Vol 219, No 12 - Manpower Needs - Mason

MEMBERSHIP SIZE, PERCENT AGE DISTRIBUTION, AND OPTIMUM POPULATION RATIOS FOR SIX LARGE PREPAYMENT GROUPS, 1970

Plan	Membership Enrollment	Age Distribution (%) Under 19 Yr.	19-64 Yr.	Over 65 Yr.	Optimum Physician-Population Ratio for Group
Health Insurance Plan (HIP)	780,000	38.0	52.4	9.6	1:1,000
Kaiser-Permanente (Portland)	145,091	39.1	54.3	6.6	1:1,200
Kaiser-Permanente (Oakland)	962,000	40.4	55.4	4.2	1:978
Kaiser-Permanente (Los Angeles)	900,000	41.1	54.8	4.1	1:1,000
Puget Sound	136,000	38.0	54.3	7.7	1:1,070
Group Health Assoc. (DC)	75,000	39.6	56.5	3.9	1:1,118
TOTAL	2,998,591	39.4	54.6	6.0	
U. S. Population	207 Million	36.7	53.9	9.5	

Taken from JAMA, March 20, 1972. Vol 219, No 12 - Manpower Needs-Mason

TABLE E

EXISTING HOUSESTAFF POSITIONS 1973

LOCATION	INTERNS G M 1	RESIDENCIES G M 2-6		FOREIGN MEDICAL GRADUATES	U.S. GRADUATES Filled (1971)
Arlington Hospitals	Georgetown	Affiliation			
Alexandria		4	Pathology	2	
National Orthopedic		8	Orthopedic	3	2
University of Virginia	47			0	41
		302		11	211
Danville		8	Surgery, Pathology, Urology	2	5
Falls Church - Fairfax Northern Virginia Mental Hospital		5		1	0
		9	Psychiatry	3	0
Newport News Riverside	16			0	6
		13		2	6
Norfolk Children's		10		6	1
DePaul	12			11	0
		17		12	0
Norfolk General	21			8	5
		56		11	31
Petersburg Central State		10		5	1
Portsmouth General Hospital		10	GP	3	0
Maryview Hospital		4	GP	3	0
Richmond Johnston-Willis	14	0		2	0
Medical College of Virginia	97	345		40	402
Roanoke Community	12	6		5	0
Memorial	20			0	21
		40		3	13
Suffolk Obici		7	GP	7	0
Williamsburg Eastern State		14	Psychiatry	6	5
	239	868		148	750

PRACTITIONERS NEEDED FOR STATE OF VIRGINIA
Based on Placement Data Now Available

Physicians	Number in State	Number Needed in State now	Number in Residency-MCV	No. in Residency-Charlottesville	Residency Increase
Family Practice	1150	According to Placement Bureau	69 (23/year)	18 (6/year)	Special Report
ENT	118	15	9 (3/year)	6 (2/year)	2/year at MCV
Ophthalmology	136	10	9 (3/year)	6 (2/year)	1/year
Anesthesiology	142	20 (Each Hosp. needs 4)	13 (4/year)	14 (4/year)	1/year VCU-MCV 1/year U. Va.
Dermatology	61	3	9 (3/year)	6 (2/year)	None
Internal Medicine	1450	None	60	41	30 (10/year)
Neurology	57	6	8 (3/year)	14 (3/year)	1/year
Pediatric Neurology	3	2	0	1	1/year
Neurosurgery	63	None	7	6	None
Ob/Gyn	355	None	29 (7/year)	12 (4/year)	3
Oral Surgery	43	0	6 (3/year)	---	None

PRACTITIONERS NEEDED FOR STATE OF VIRGINIA
Page 2

Physicians	Number in State	Number Needed in State now	Number in Residency-MCV	No. in Residency - Charlottesville	Residency Increase
Orthopedic Surgery	123	3	12 (4/year)	16 (4/year)	None
Pathology	175	None	25 (Approved 24)	8 (2/year)	None
Pediatrics	321	SPECIAL REPORT	37	18 (6/year)	6 (2/year)
Physical Medicine	18	4	2	None	2 (1/year)
Psychiatry	346	40	14 (4/year)	24 (8/year)	9 (3/year)
Radiology	212	None	28 (24 Diagnostic 4 Therapy)	15 (5/year) 6 (3/year)	None
Surgery	556	None	36 (8/year)	32 (8/year)	None
Urology	117	0	10	8 (2/year)	None
Pediatric Cardiology	9	None	2	2 (?)	None
Pediatric Allergy	5	12	2	2	2 (1/year)
Emergency Room	60	10	0		6

APPENDIX 6

Grant Application to Citizen's Conference on State Legislatures.

Application of the Virginia House of Delegates Committee on Health, Welfare and Institutions for Participation in the Model Committee Staff Program in Health

Application of the Virginia House of Delegates Committee on Health, Welfare and Institutions for Participation in the Model Committee Staff Program in Health

I. Introduction.

The leadership of the House of Delegates of Virginia recognizes the Model Committee Staff Program in Health as an excellent opportunity to determine the effectiveness of full-time staff assistance for standing committees in improving the legislative process. The program also allows the General Assembly the necessary resources and expertise to deal with a crucial problem in the health care delivery system of the Commonwealth.

The leadership of the House of Delegates has designated the House Committee on Welfare and Institutions to conduct the proposed study. This Committee is chaired by Delegate John D. Gray of Hampton. Realizing the volume of the work of his Committee, Delegate Gray has divided it into several subcommittees. One of these subcommittees deals specifically with matters relating to health. The subcommittee is chaired by Delegate Donald Pendleton of Amherst. This subcommittee will conduct the actual study of the subject matter proposed in the following pages. The membership of the Committee and subcommittee will remain static for two years after the House is reorganized in January.

II. Proposal for Study.

For many years, the General Assembly of Virginia has attempted to deal with the problem of providing adequate health care to the citizens of the Commonwealth. One of the major recognized problems is a shortage and lack of availability of manpower especially in the rural and core city areas of the State. This shortage, some feel, is based upon solving the problem of training and education for, retention of and distribution of health manpower. Numerous studies have been conducted by interim committees and commissions on these subjects. Our study proposal will deal with the subject of retention and distribution of medical manpower.

"Health manpower" as used in this proposal means all persons directly providing health care to the citizens of this Commonwealth including non-licensed health occupations.

The Committee proposes to study the problem of the retention and distribution of health manpower in the Commonwealth. The study will seek to determine the effect of retention and distribution of health manpower on the provision of adequate health care throughout the Commonwealth.

The Committee will seek to determine the relationship of the place of education and training to the place of practice of their profession by health manpower. A number of national studies tend to show that physicians usually practice in the place at which they receive their graduate medical education. The Committee proposes to determine the validity of the above statement. If the statement is found to be valid, the Committee proposes to consider recommendations to provide for an adequate number of graduate positions in the medical schools and affiliated programs to provide for the Commonwealth's health care needs. The Committee will not limit itself to physicians but will study the reasons why adequate allied health manpower are not being retained to practice in the State. The Committee will seek to determine the effect of the various sources of funding for health manpower education and training programs to determine its effect upon the types of programs offered in the State and their relationship to the needs of the State.

The Committee also will seek to determine the distribution of health manpower in the State. It proposes to determine the causes of the present distribution of health manpower and possible means to alleviate causes which have an adverse effect on the proper distribution of health manpower. The affirmative steps which can be taken by the General Assembly to encourage health manpower to locate in geographic areas of need will be studied as well.

In summary, the Committee proposes to study the problems of and causes for the retention and distribution of health manpower. It intends to formulate legislative programs to promote the retention of health manpower trained and educated in Virginia and the proper distribution of health manpower to provide adequate health care for all the citizens of the Commonwealth.

III. Objectives of the Study.

The first major objective of this proposed study is to study the problem of retention and distribution of health manpower and its relationship to the provision of adequate health care to all citizens of the Commonwealth.

The second major objective of the proposed study is to permit the General Assembly of Virginia to see first-hand how a committee will operate if it is provided a full-time staff to assist it. The General Assembly recognized the need for staffing for standing committees in the 1973 report of its Commission on Legislative Process. The Commission recommended staffing be provided to the standing committees on an experimental blend of centralized and decentralized staffing. The report directed the Virginia Division of Legislative Services to allocate staff to some standing committees. The report recognizes the need for staffing for the standing committees as a means to eliminate the present confused circumstances of the legislative process in Virginia.

IV. Need for Study.

The General Assembly of Virginia has enacted several resolutions authorizing studies concerning the provision of the health care to Virginians. The following will show the need for further study and the interest shown by the General Assembly.

Senate Joint Resolution No. 28 of the 1970 Session of the General Assembly continued the work of the Rural Affairs Study Commission. One of the specific charges to this Commission was to study the provision of improved and reliable access to a reasonable and acceptable quality of health care for all Virginians. The Commission studied the problem of health care especially in the rural areas through a subcommittee on which Donald Pendleton served as Chairman. The Commission concluded that medical services are unevenly distributed throughout the Commonwealth with a resulting lack of access of modern testing and services of specialists. The Commission noted that there is a rapidly declining number of primary care physicians in the State and a need to reverse this trend. The Commission recognized the need and demand for health manpower to provide adequate health care. It urged larger medical school enrollments and more opportunity through scholarship programs for those physicians who indicate an interest in family practice and a desire to serve in areas of the Commonwealth where need is greatest. It further recommended that priority be given to planning and initiating educational programs necessary to provide nurses, dental assistants and other paraprofessionals in the health care field. A copy of the report of the Rural Affairs Study Commission is attached to this application and numbered Exhibit 1. The recommendations can be found on pages ten through twelve inclusive.

By House Joint Resolution No. 104 of the 1970 Session of the General Assembly, the Virginia Advisory Legislative Council was directed to study the

shortage of family physicians including the ways and means to relieve this shortage. The Council presented its report in December of 1971. The report recognized the shortage of family physicians in the Commonwealth especially in the rural areas and the inner city areas. The Commission recommended expanded and new programs of residency in the State for training of family practitioners. The Commission also recognized a need to go forward with a program to attract physicians to areas of need. The Commission recognized the need for programs to train paramedical personnel to assist the family practitioner. A copy of the Council's report is enclosed with this application and numbered Exhibit 2.

By an Act of Assembly in 1968, the General Assembly created a Commission to study the advisability and feasibility of utilizing certain medical facilities in Virginia for clinical instruction of medical students and for training of students in allied health fields. This Commission was continued by an act of assembly in 1970 and again in 1972. It continues to function today. In the 1971 report of the Commission, the Commission recognized the importance of the continuance of programs whereby medical students could spend their last year of school at a community hospital receiving training and being familiarized with areas of the Commonwealth where there is a need for more physicians. The Commission recognized that one of the objectives of the Affiliated Hospital Program to be an increase retention of physician graduates in Virginia. A copy of the 1973 report of the Medical Facilities Commission is enclosed with this application and numbered Exhibit 3.

Other studies are being conducted and have been conducted at the direction of the General Assembly by several state agencies which relate to the provision of an adequate supply of paramedical personnel as nurses, medical and dental technicians and assistants. These studies too indicate as their purpose the provision of adequate health care to all citizens of Virginia.

As the studies show, the provision of adequate health care to all Virginians is a paramount issue before the General Assembly. There is a need to determine the causes and reasons for the retention of health manpower or lack thereof and the reasons why the health manpower is distributed as it is. The legislature must know these causes and the alternatives to alleviate them in order to arrive at the goal of adequate health care evenly distributed throughout the Commonwealth. If the legislature is presented with a viable program to promote the stated goal, legislative action is most likely to result from the study by the Committee.

By Senate Joint Resolution No. 20 of the 1968 Session, the General Assembly of Virginia began a study of its legislative process. The Commission on the Legislative Process has continued to study the functioning of the General Assembly and how it can be improved. Quoting from Speaker of the House John Warren Cooke's letter on page one of the Commission's 1972 report, "In the area of staffing, we found that, regardless of the index used, the Virginia General Assembly consistently ranked among the least staffed, . . . legislatures in the union." In the Commission's recommendations on staffing, the Commission provided for an experiment to allow some standing committees to have centralized staff from the Virginia Division of Legislative Services and some standing committees to have temporary staff. The Commission recognized the need for permanent staff for standing committees in its 1972 report but has made the matter a subject of further study.

The leadership of the General Assembly perceives the Model Committee Staff Program as an excellent opportunity for the members of the General Assembly to observe the operations of a standing committee with the help of full-time staff. This Program will further assist the Commission on Legislative Process in its deliberations on the problems of staffing for the General Assembly.

The leadership of the House of Delegates is prepared to support the staff members under the Program with all reasonable on-site costs. The reference in the preliminary questionnaire to consulting fees and contracts will have to be dealt with on a situation-by-situation basis. If the needs of the study require consulting help and the costs are reasonable, there appears to be no reason why the House of Delegates would not support such a request.

VI. Support from Other Sources.

The executive branch of the State government has several agencies which can render invaluable assistance to the Committee's study. The Department of Health has section on comprehensive health planning which acts as a clearinghouse for data in the health care area as well as providing a planning function. The Council on Higher Education has been directed by the General Assembly to conduct a health manpower survey which should serve as an excellent data base for the study. In addition, the Council has an advisory committee on Health Professions and Occupations which should be of assistance to the Committee. There are several regional planning districts which are working with the problems of health care.

The State has three medical schools which will be able to provide assistance. These are the Medical College of Virginia in Richmond, the University of Virginia School of Medicine in Charlottesville and the Eastern Virginia Medical School in Norfolk. The University of Virginia School of Medicine does have a section on comprehensive health planning.

The professional organizations which are available to assist in the study include the Medical Society of Virginia, the Virginia State Dental Association, Virginia Academy of General Practice, Virginia Hospital Association, Virginia Nurses Association, Virginia Pharmaceutical Association, Virginia Physical Therapy Association, and the Virginia Association of Professions. The above list is not all inclusive but various other interest groups would be included as the need arises.

The General Assembly has had excellent cooperation from the executive branch and the various interest groups. Most of the studies conducted in the past have been by short-lived committees and commissions. These bodies have generally had quality participation from both the executive branch of State government and the interested citizens of the State. Many such persons have served on the committees and commissions with distinction and have been a valuable asset to the work of such bodies.

VII. Conclusion.

The leadership of the House of Delegates of Virginia views the Model Committee Staff Program in Health as an excellent opportunity to observe the work of a standing committee which operates with staff sufficiently. The Program allows the General Assembly to make judgments about the future of its legislative process based on first-hand information. The Program will aid in the choice of a wise course for the Commonwealth to take in its legislative process for the future.

The Speaker of the House of Delegates requests that Virginia be chosen as one of the demonstration states for the Model Committee Staff Program in Health to allow the General Assembly of Virginia to participate in this invaluable experience.

APPENDIX 7

Statement of Citizens Conference on State Legislatures.

THE MODEL COMMITTEE STAFF PROGRAM IN HEALTH

Conducted by

THE CITIZENS CONFERENCE ON STATE LEGISLATURES
4722 Broadway, Kansas City, Missouri

With the Support of a Grant from

THE ROBERT WOOD JOHNSON FOUNDATION
The Forrestal Center
Princeton, New Jersey

May, 1973

INTRODUCTION

With a grant from the Robert Wood Johnson Foundation the Citizens Conference on State Legislatures is undertaking a two to three year "Model Committee Staff Program in Health." The program will provide funding for professional staff personnel for a demonstration committee in each of six to eight states.

The major objectives of the program are:

— to demonstrate the value of year-round operation of standing committees, and year-round staffing of such committees by qualified professional personnel.

— to assist state lawmaking bodies to formulate sound public policies governing the delivery of health services and related issues.

Virtually all legislatures now have some central staff support. But in only a handful are standing committees supported now year-round with professionally qualified staff personnel who can collect, analyze and interpret available data, carry out needed additional research, arrange public hearings, and provide technical assistance as the committee chairmen and members assess public needs, hammer out policy positions, generate public support, translate substantive recommendations into proposed bills and follow them through the lawmaking process. In those few states the value of year-round operations of standing committees with professional staffing is reflected in the quality of the legislative end product.

Professional staffing of year-round standing committees is a next logical step in equipping legislatures to function more effectively, and many legislators are seriously considering that step. CCSL's Model Committee Staff Program is intended to hurry history along by arranging substantial outside funding for a limited number of fully staffed, year-round standing committees to serve as demonstrations.

Grant funds will cover the salaries of the professional staff (typically a legislative generalist, a subject matter specialist and an intern) as well as most of the related direct costs. Outside funding of "on-site" operations is expected to average about $175,000 per demonstration state for the two to three year period of the program, but because of variables the amount may be less in some and more in others.

The legislatures that participate in the demonstration program will be expected to cover overhead costs such as office space, telephone, equipment, supplies and perhaps clerical support and some direct costs. This contribution represents about one-third of total on-site costs but may be provided in kind rather than cash.

PROGRAM COMPONENTS

Advisory Committee

Throughout the course of the program an Advisory Committee will provide general advice and guidance to CCSL. The Committee includes members who have earned recognition for their leadership in health matters as well as members who have extensive state government experience and close familiarity with the environment in which public policies are formulated.

Selection of Demonstration States

In the selection of states to participate in the program a number of criteria will be considered; among others the following: Is the subject matter of the

proposed committee inquiry recognized as urgent? Are there indications that the legislature is willing to consider positive action? Are significant legislative results likely to flow from the effort? Is there an understanding on the part of the legislative leaders of both parties in both houses of the purposes of the model committee effort? Is there a substantial commitment of support on the part of the leadership? Is there reasonable assurance that the membership of the model committee will remain virtually unchanged throughout the duration of the project? Is the legislature ready to consider professional staffing of major committees as a next logical step in improving its capability to function as the co-equal policymaking branch of state government? What professional and lay organizations are available to provide public support? As an indication of interest and commitment, will the legislature cover overhead costs and provide back-up research capacity, bill drafting expertise, and other resources that may be available from existing central legislative service agencies?

Staff Recruitment

While the selection process is underway, CCSL will begin a nationwide staff recruiting program. At the same time, discussions will be initiated with educational institutions that may be able to provide interns to work with the model committee staffs. Final selection of staff personnel will involve full participation and concurrence by the chairmen of the demonstration committees.

Staff Training

When the states have been selected and the staff recruited, a two week intensive training program will be conducted by CCSL for the staff members. The purpose of the training program — tentatively scheduled for August — is to familiarize the staff with legislative operations with special attention to the procedures and traditions of the states where they will be working, to instruct them as to the proper role of a legislative committee staff, to expand their knowledge of available sources of technical advice, support and assistance from within the state and elsewhere, and to make sure they clearly understand the constraints imposed by Federal law on the use of Foundation funds.

Orientation of Demonstration Committee Legislators

A three to five day seminar for the demonstration committee legislators will be held in late October or early November after the staffs are on site and after the committees, with staff assistance, have worked out comprehensive plans of operation. The seminar will offer an opportunity for the legislators to reinforce their knowledge of the health issues which they have selected for consideration, and will acquaint them with sources of advice and assistance that they may call upon during the course of the project. In addition, the seminars will provide a forum for the exchange of information about objectives, plans of operation, and schedules of activities.

CCSL Continuing Consultation

Throughout the period of the project, CCSL will maintain close and continuing contact with the demonstration committees and their staffs. In addition to recording progress, CCSL will assist the committees in finding consultants and special research capacity as needed. Moreover, CCSL will arrange periodic joint meetings of chairmen, key members and staff directors of the several model committees at which they may exchange information, share experiences, and consider mid-course corrections.

The continuous monitoring by CCSL will provide the kinds of evaluation information needed for program management purposes. In addition, the Foundation has made arrangements for a separate objective evaluation of the program's accomplishments.

"Technology Transfer" Seminar for Non-Model Committee State Legislators

At the close of the project, CCSL will conduct a three to five day seminar to which will be invited key legislators from twelve to fifteen states, that did not participate in the programs as well as legislators who were directly involved in the demonstration project. The purpose of the seminar is to export the experience gained during the course of the program and to link the legislators of other states with the national resources that are available in the health field.

APPENDIX 8

Report of the Affiliated Hospital Program of the University of Virginia at Roanoke.

The 1968 General Assembly of Virginia enacted Chapter 547 which "created a commission to study the advisability and feasibility of utilizing the medical facilities, resources and professional personnel of Roanoke and other communities in the western part of the state as an affiliated operation of the University of Virginia, directed toward participation in the education of medical students in their clinical years, post graduate residency training and continuing education, as well as training in the allied health professions". This Commission reported that there was a shortage of physicians nationally and in the state of Virginia. In 1967, Virginia had only 104.5 physicians per 100,000 population compared to the national average of 132 and studies showed that the state was losing family physicians faster than other types of physicians and that rural areas were losing physicians at a faster rate than urban areas. Studies indicated that Virginia should work toward a goal of 350 to 400 physician graduates per year by 1975.

The Commission recommended that affiliated programs between the University of Virginia School of Medicine and certain other medical communities should be undertaken immediately and that the Commission's study and planning should be extended during the next biennium. The 1970 General Assembly did continue the Commission which in its 1972 report recommended full implementation of the University of Virginia School of Medicine plans for expansion of the affiliated hospital program with the required budgetary support; and budgetary support of educational programs in family practice proposed by the University of Virginia and the Medical College of Virginia.

Accordingly, the University of Virginia School of Medicine has been rotating medical students to Roanoke regularly for basic courses (clerkships) in medicine and surgery at the Roanoke Memorial Hospitals and the Veterans Hospital in Roanoke, and rotating students for elective courses in a wide variety of medical disciplines in these two institutions, the Community Hospital of Roanoke, the Lynchburg General and Virginia Baptist Hospitals in Lynchburg, and Winchester Memorial Hospital in Winchester. Basic clerkship courses in psychiatry, pediatrics and obstetrics and gynecology will begin in Roanoke in 1974.

Dr. Harold Haley, previously Associate Dean at the Medical College of Ohio at Toledo was appointed Associate Dean — Roanoke in September, 1972 for direction and coordination of the affiliated program between the University of Virginia and the three participating hospitals in Roanoke. Currently there are five full-time faculty members at the Veterans Hospital and four full-time faculty members at the Roanoke Memorial Hospital, with active recruiting in progress for additional faculty positions necessary for the full implementation of the program. Several physicians in the Roanoke area hold appointments as volunteer members of the faculty and give generously of their time to the teaching program. The participating hospitals provide physical and educational facilities for the program, as well as meals and lodging for students.

The Roanoke hospital facilities, including 2,000 beds, physicians and associated health personnel programs represent a great resource for health care and education for western Virginia, the state at-large, and the University of Virginia, which, in turn, can lend great strength to their optimal development and utilization. This capacity for large numbers of students to receive a portion of their medical education in the affiliated hospital program provides an extremely important resource for present and future economical expansion in medical education in Virginia.

By 1974 there should be approximately 30 students at all times in Roanoke and up to 50 at a time by 1975 or 1976. A nucleus of faculty members is

required for such a program. *Therefore, the Commission strongly recommends* continued budgetary support for the optimal development of the affiliated programs.

As predicted earlier, by the Commission's studies, one of the most important facets of the affiliation promised to be the opportunity for development of family practice educational programs. The University of Virginia and Roanoke Memorial Hospital family practice residencies, since their beginning in 1971, have grown to include 33 residents as of July, 1973 with projections for a minimum of 42 by July, 1974. A satellite extension to Lynchburg under study to open in July, 1974 could add an additional 12 to 18. The retention in the state of these young family physicians is a significant and important objective. To this end, it is significant that some 70 graduates of Roanoke Memorial Hospital's intern and residency programs are engaged in primary care in various Virginia communities, 54 as family physicians, 6 as internists, 3 as pediatricians and 7 as emergency room physicians. There is good evidence that the site of intern and residency training has a stronger bearing upon the ultimate location of a physician's practice than state of origin or medical school. Data on these 70 physician graduates of Roanoke Memorial Hospital bear this out strongly, in that 63 of these physicians are located within a 75 mile radius of Roanoke or in more distant localities in Southwest Virginia.

As a part of comprehensive, long-term planning for health education to meet the state's health manpower needs, there appear to be emerging at the moment five primary centers for such programs; namely Richmond, Charlottesville, Tidewater, Northern Virginia and Roanoke. The importance of developing graduate educational programs in Roanoke and perhaps in the future Lynchburg and other western Virginia communities for the continued provision and retention of health manpower in the western Virginia area cannot be stressed too strongly.

Therefore, *the Commission strongly recommends* the continuing support of residency training programs in family practice. The Commission further suggests that during the next year that serious consideration should be given to the question of some form of budgetary support for residency education in other programs, particularly other primary care specialties.

APPENDIX 9

Report of the Affiliated Hospital Program of the University of Virginia at Roanoke (Haley).

UNIVERSITY OF VIRGINIA
SCHOOL OF MEDICINE

ROANOKE OFFICE
222 WALNUT AVENUE, W.W.
ROANOKE, VIRGINIA, 24016
703-344-8376

October 19, 1973

TO: Medical Facilities Commission

FROM: Harold B. Haley, M.D., Associate Dean-Roanoke, University of Virginia School of Medicine

RE: Informal Report on Roanoke Program of University of Virginia School of Medicine

I. Plans

A. Clerkships in Medicine, Obstetrics, Pediatrics, Psychiatry, Surgery.
B. Medical Student Electives — all clinical fields.
C. Family Practice programs.
D. Residency programs.
E. Three hospitals plus other facilities.

II. Current Status.

A. Students started clerkships in Medicine and Surgery on January 15, 1973. Elective programs are being expanded. We currently average about 12-15 students in Roanoke at a time.

B. Faculty on scene or arriving shortly.

1. Roanoke Memorial Hospitals:

Director of Academic Programs and Internal Medicine — Dr. Charles L. Crockett, Jr.
Family Practice — Dr. J. Francis Amos
Surgery — Dr. Robert E. Berry
Psychiatry — Dr. John DeVerter

2. Salem Veterans Administration Hospital:

Director of Academic Programs — Dr. Francis L. Brochu
Internal Medicine — Dr. William E. Reefe
Dr. Jorge Roman
*Surgery — Dr. Joseph A. Bono
Dr. Antonio T. Donato
Nuclear Medicine — Dr. E. Gifford Ammerman
Psychiatry — Dr. Jan Louw

*We are close to appointment of a well-qualified Chief of Surgery.

3. University of Virginia:

Associate Dean-Roanoke — Dr. Harold B. Haley

C. Faculty being planned for:

1. Search is underway for full-time Director of Pediatric Education at Roanoke Memorial Hospitals.

2. Search is underway for full-time Director of Obstetrics-Gynecology Education at Roanoke Memorial Hospitals. A site visit has been made for a residency program.

3. Additional faculty in Family Practice and Internal Medicine are being recruited.

D. Community Hospital of Roanoke Valley:

Separate meetings have been held with the Executive Committee of the Staff and Chiefs of Services, Departments of Medicine, Surgery, Obstetrics and Gynecology, and Pediatrics. Continuous discussions are underway with the Director and Chief of Staff. Active recruiting is under way for a Director of Academic Programs.

E. A proposed affiliation agreement between the University and local hospitals is being actively negotiated.

F. A residency in Internal Medicine as a joint program between the Roanoke Memorial and Salem Veterans Administration Hospitals, affiliated with the University of Virginia Department of Medicine, has been approved.

G. Dr. Haley has visited hospitals and physicians in eighteen communities in Southwestern Virginia between Roanoke and Pennington Gap as a first step in acquiring first-hand knowledge of health care delivery needs in this area. A similar visit to South Central Virginia is scheduled.

H. The University of Virginia School of Medicine administrative office is established in a small office suite in a building located in close proximity to many doctors' offices and about half way between the two community hospitals. A neutral location is deemed essential.

I. One of the most important aspects of developing the program is the constantly increasing bilateral participation between the Charlottesville and Roanoke faculties. Joint activities occur weekly in several fields. Roanoke faculty now serve on several in-house committees in Charlottesville. In December, the Medical School conducted a faculty-student retreat in Roanoke which gave Charlottesville staff additional opportunity to become personally knowledgeable about the Roanoke program.

III. Needs.

At present, future development requires consideration of the following:

A. Professional staff in Internal Medicine and Surgery are excellent. Some additional people will be added in Internal Medicine and Family Practice.

B. Obstetrics-Gynecology, Pediatrics, and Psychiatry will require the equivalent of two full-time men in each field to meet demands of undergraduate, house staff and continuing education, administrative functions, and practice.

C. To develop an innovative, high quality educational program that makes for highest efficiency of faculty and best learning for students, we have specific education needs:

1. Professional staff competent to evaluate and analyze our educational program, faculty performance, student learning, relationships with the Medical School and effects on our constituency. These must be constantly studied and evaluated to provide for continuing improvement in our program.
2. Staff for development of learning materials and biomedical communications. This includes audio-visual capability.
3. Communication and transportation between Charlottesville and Roanoke requires further consideration.
4. Student housing is available for about 24 students. We will rapidly be getting more students than 24. This matter should have further long range planning.

APPENDIX 10

Review of the University of Virginia Affiliated Hospital Program in Lynchburg

CONTINUING MEDICAL EDUCATION
And
COMMUNITY HOSPITAL PROGRAM

AFFILIATED WITH:
LYNCHBURG ACADEMY OF MEDICINE
LYNCHBURG GENERAL-MARSHALL LODGE HOSPITALS
VIRGINIA BAPTIST HOSPITAL
UNIVERSITY OF VIRGINIA SCHOOL OF MEDICINE

DONALD SHOTTON, M.D., DIRECTOR
OFFICE ADDRESS:
VIRGINIA BAPTIST HOSPITAL
LYNCHBURG, VIRGINIA 24503
TELEPHONE (703) 384-4594

February 28, 1973

TO: Thomas L. Gorsuch, M. D., Chairman, Medical Facilities Commission

REPORT: REVIEW OF THE UNIVERSITY OF VIRGINIA AFFILIATED HOSPITAL PROGRAM AT LYNCHBURG by Dr. Donald Shotton, Associate Professor of Medicine, University of Virginia School of Medicine and Director of Medical Education, Lynchburg General-Marshall Lodge and Virginia Baptist Hospitals, Lynchburg, Virginia.

1. For Clarification and review the University of Virginia School of Medicine and the Lynchburg Community, including the hospitals named above and the Lynchburg Academy of Medicine, agreed to a three year program of affiliation for the purposes as contained in the previous Commission Reports and was initiated in September 1970. The Director of Medical Education of the program in Lynchburg spent a year in Charlottesville working with the faculty and administration of the University of Virginia School of Medicine. Implementation of the program of affiliation as it related to continuing education, student elective and preceptorship programs with the University of Virginia School of Medicine was initiated in September 1971 in Lynchburg. The DME continues to participate in activities at the University of Virginia School of Medicine one day a week and one month a year as an attending faculty member with student clerks and is Acting Director of the Continuing Education Program at UVA.

2. CONTINUING EDUCATION ACTIVITIES:

   a. Formal in depth presentations and discussion of subjects considered to be of interest and value to physicians and nurses in this community have been scheduled in 1970, '71, '72, '73. A Joint Program Committee of the two hospital staffs and the Lynchburg Academy of Medicine with the DME make the selection of subjects. Faculty members from the medical schools in Virginia have been cooperative in these programs as guest speakers. The programs are physician oriented but graduate and student nurses are invited and attend.

   b. A Cardio-Pulmonary-Resuscitation course for physicians has been instituted and continues for physicians of each hospital staff and for those in the medical communities surrounding Lynchburg.

   c. The Internal Medical Sections of the Departments of Medicine meet for educational conferences bi-monthly with the DME office assisting in this activity.

d. Review of deaths occurring on the Medical and Surgical Services, as required by the Joint Commission on Accreditation of Hospitals, was initiated in 1972 as a joint activity between the hospital's departmental organizations.

e. Planning and implementation of an Intensive Care Course for nurses has been instituted at the Virginia Baptist Hospital in cooperation with the In-Service Nursing Director. An on-going program at the Lynchburg General-Marshall Lodge Hospital continues.

f. A Joint Cancer Clinical Activities Program was established in October 1971. Its main purpose and function is to provide consultative services to physicians for patients with malignant disease diagnosed and treated at either hospital. A discussion of cases presented to the members of the Tumor Board Committee is held in an effort to arrive at the most appropriate treatment for each patient. To date 249 patient presentations have been discussed and conferences are held weekly. A consultant from the Radiotherapy Department of the University of Virginia School of Medicine is present at each conference. A Joint Tumor Registry has been established for the community by the hospitals of Lynchburg.

g. Pediatric teaching conferences and patient clinics are held three days a month for consultative services in the areas of pediatric endocrinology, diabetes, congenital and rheumatic heart disease and hematology. These clinics are staffed by members of the University of Virginia pediatric faculty (with residents and students) who have expertise in the respective areas named above and in cooperation with the pediatricians of Lynchburg and the hospitals. The clinics are followed by a luncheon meeting and educational conference on each clinic day. These clinics and consultants have added a valuable service to patients in Lynchburg.

h. Library services for the physicians and nurses at each hospital were improved through designation of a full-time librarian at the Lynchburg General-Marshall Lodge Hospitals. Funds obtained by each hospital library for the purchase of books, journals and other facilities were obtained through two $3,000. Library Improvement Grants from the National Library of Medicine. In December 1972 approval was obtained from the hospital administrations, Joint Library Committee, librarians, and the board and membership of the Lynchburg Academy of Medicine for a Sub-Regional Library Program. An $18,000 Library Grant has been obtained from the Virginia Regional Medical Program thru the University of Virginia Regional Library Program. This will give our library systems an opportunity for further expansion and improvement of services to the medical community.

3. MEDICAL STUDENT ACTIVITIES:

a. Students in their third and fourth year from the University of Virginia School of Medicine have participated in the community hospitals in Lynchburg on an elective basis. These students and their attending physicians have had rewarding experiences. Students have been in small numbers with a predominance of them training in obstetrics, pediatrics, and family practice.

b. In January-February-March of 1972 first year medical students in groups of ten visited the Lynchburg hospitals under the supervision of staff physicians. They were also supervised in physician's offices. These experiences in the hospitals and offices were their initial ones in

community medicine. The 30 students who participated in this program gave their experiences in this community their highest evaluations. This program under sponsorship of the Family and Community Medicine Division of the University of Virginia School of Medicine is in progress at this time, February 1973.

c. A number of medical students in 1971 and '72 were employed by each hospital as "back up" nurses in the area of coronary care and other areas of hospital activities.

4. FAMILY PRACTICE RESIDENCY PROGRAM:

In 1972 a committee for study of a Family Practice Residency Program was appointed by the Lynchburg Academy of Medicine. This committee functioned and submitted their report to the Lynchburg Academy of Medicine Board in May of 1972 and was approved. This report and recommendation of the Board was to have been presented to the Lynchburg Academy of Medicine at the June meeting in 1972 for its action but was deferred. A residency program in family practice in Lynchburg would have a number of advantages — briefly stated — to include an increased supply of physicians to this area and the state, improved patient care in the community, and serve as an excellent vehicle for physician education at the hospital staff level. The benefits of the expertise of the physicians in Lynchburg participating in such a program would assure the quality training of resident family physicians. It was anticipated that this program, with approval of the Lynchburg Academy of Medicine membership and the hospitals Boards of Trustees and medical staffs could have been started in July 1973. The next possible date of a program beginning would be in July 1974. Funding support for a residency program would be anticipated from the state similar to those already sponsored on an affiliated basis with the two state medical schools.

5. CONTINUING EDUCATION FUND:

A Lynchburg General-Marshall Lodge-Virginia Baptist Hospital Continuing Education Fund was established as a separate account with funds for this account being obtained from the drug companies willing to sponsor programs in continuing education, several private donations, and all payments for the Director of Medical Education's participation in the Health Department Clinics, and any funds received from consultations. All of these funds are directed to the Continuing Education Fund. These funds are used for the payment of honoraria and other expenses felt to be appropriately charged to this fund.

6. In the Commission Report of 1972 on page 15 the subject of housing in included. From the paragraph on housing the statement that, "The Commission believes that students assigned to affiliated hospitals for lesser periods should have housing provided since such assignments could create certain problems." This was in reference to students taking electives and/or clerkships for periods of time less than a full year or two years of their training in a community setting. Each hospital in the affiliated program has agreed to provide some living accommodations at its own expense. With the anticipated increase in elective selections at the affiliated community hospitals and the increased public and physician concern of rising patient care costs while in a hospital, further consideration would seem appropriate by the Commission on this subject. With the uncertainty regarding the numbers of participants in a given community in the elective student program at this time a per diem allowance to the student, making it possible for him to pay for his housing, board, and travel, could be an economical and feasible arrangement. This would further encourage student elective selections in the affiliated

community hospitals. At the present time expenses incurred in this educational activity by the community hospitals, in large part, is reflected in patient charges.

7. At the present time Lynchburg is not in a position to offer clerkships as they require faculty and desirably house staff, nor are they necessary by the University of Virginia School of Medicine since the program in Roanoke has developed to fulfill these needs at present.

8. At the present time the direction of the affiliated program in Lynchburg and its component parts is under discussion by the Lynchburg Academy of Medicine.

9. In the anticipated development of the Family Practice Residency Program in Lynchburg assurances and cooperation in terms of support have been given by the University of Virginia School of Medicine. Funding for such a program as it relates to family practice residency salaries and faculty support by the Medical Facilities Commission would be critical to its development in July 1974.

APPENDIX 11

Review of the Affiliated Hospital Program of the University of Virginia at Winchester

(1) *Memorandum of Understanding Between The University of Virginia and Certain Affiliated Hospitals.* This agreement was developed by an ad hoc committee chaired by Dr. William Thurman. It formalizes what had been in effect for the past five years and sets up a liaison committee between the University and the community. This committee is to meet annually. In addition there will be a review committee consisting of all active affiliated hospital liaison committees which will also meet annually.

This agreement was well received and was approved by our hospital's medical staff, by the administration and by the governing body. This initiates a second five year commitment to the program. The hospital renews its agreement to house and feed four medical students throughout the year.

2) *Student Program.* A copy of the outline of this program is attached hereto. In 1972 we had 8 students for elective programs: Internal Medicine (2), Neurology (1), Psychiatry (1), and Pediatrics (4). In the first half of 1973 we have had 4 students: Psychiatry (1) and Pediatrics (3). All of these students have felt that their experience was valuable and rewarding. Three students who were here for a third year pediatric elective returned for one of their fourth year electives. A letter from a recent student here on pediatrics recently included the following comment: "I can honestly say that this has greatly influenced my future training, prejudicing me in favor of this type of community practice. As a practical learning experience this has been among the best I have encountered so far."

The major problem with this program is that we are not getting a steady flow of students. The reasons for this include problems with transportation and with family commitments. Efforts are being made to expand the program by improving communication between all parties concerned.

3) *Continuing Education.* With the advent of PSRO continuing education becomes of even more importance than in the past. We are continuing to expand our program with the full support of the University of Virginia through our Visiting Professor Program (1 day per month) and our Tumor Clinic Consultants (2 days per month). With the development of the audiovisual department at the University we are receiving television cassettes of Medical Grand Rounds each week. These are being well received by both our physicians and our nurses. This is expanding rapidly into other areas and all of these programs are being made available to us.

In the past month Dr. James W. Craig, Associate Dean, University of Virginia School of Medicine and myself visited the Warren County Memorial Hospital and the Shenandoah County Memorial Hospital and explored with them the possibility of organizing cooperative programs in continuing education utilizing visiting professors, speakers from Winchester and the TV cassette programs. It is too early to predict the outcome of these efforts but it is our hope that this type of "regionalization" can be organized and that it can be made to function effectively. We would like to develop this as a model program and attempt to build into it some method for evaluating its effectiveness. We believe that if PSRO is to function efficiently some type (or many types) of programs of this general nature will become essential.

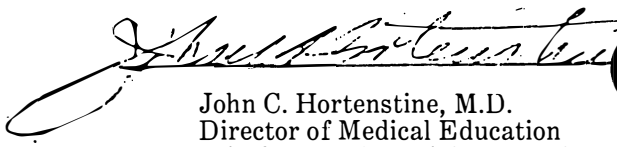
In view of our experiences over the past five years and with a view towards the future we would recommend the following:

1) That we continue to receive full budgetary support for the affiliation program and that we continue to expand these programs to meet the needs of the Medical Centers, of the Communities and of the State.

2) That the student elective program be expanded so as to insure a steady flow of students to the Winchester area.

3) That we give full budgetary support for the expansion of programs in continuing education and to our attempts at regionalization.

Respectfully submitted,



John C. Hortenstine, M.D.
Director of Medical Education
Winchester Memorial Hospital

WINCHESTER MEMORIAL HOSPITAL - WINCHESTER, VIRGINIA

Rotation Supervisor: Dr. John C. Hortenstine

Prerequisites: Completion of clinical clerkship in medicine

Duration: Maximum: 8 weeks
Minimum: 2 weeks
Offered the entire year

Number of Students Per Rotation: No limit

Course Description:

Students may select electives on a preceptorship basis being assigned to individual attending physicians so that they may enlarge their experience in diagnosis and treatment of patients with diseases encountered within the community setting. Programs can be tailored to meet the interests and needs of the individual student in any phase of clinical practice, both office and hospital, whether specialty oriented or in general practice. In addition, programs can be arranged in tissue and clinical Pathology, Anesthesiology, and Emergency Room Medicine. Dr. Hortenstine will supervise the work of the student and will be available to him for consultation and advice.

Winchester is 94 miles north of Charlottesville. The population of Winchester-Frederick County is approximately 45,000 and it is estimated that the population within a 20-mile radius is about 167,000, including 102,000 Virginians and 65,000 West Virginians.

The Winchester Memorial Hospital is now licensed for 389 beds plus 46 bassinets. During 1970 there were approximately 16,000 admission and 125,000 patient days excluding newborns. The hospital is approved by J.C.A.H., is affiliated with Shenandoah College School of Nursing Education, has a state approved School of Practical Nursing and a school of x-ray technology approved by the American College of Radiology and by the American Medical Association. A school for Inhalation Therapists has been in operation for several years and has AMA approval.

The medical staff consists of 90 physicians of whom 79 are in specialty practice and 11 are in Family Practice. All major specialties are now represented with the addition of Neurosurgery in 1967 and Neurology in 1968.

There is a four-man Department of Radiology performing approximately 52,000 procedures annually. The clinical laboratory and pathology department consists of six full-time pathologists and performs approximately 420,000 procedures annually. The Department of Anesthesiology is supervised by five full-time physician anesthesiologists and five nurse anesthetists. The emergency and out-patient service is directed by four full-time physicians and is presently handling patients at an annual rate of 30,000. There is a well equipped Intensive Care Unit of 11 beds of which 7 are monitored. There is a 7 bed Coronary Care Unit, all of which are monitored. The surgical recovery room accommodates 10 patients. There are active departments of Inhalation Therapy, Physiotherapy and Pharmacy.

The clinical educational programs at the Winchester Memorial consist of:

1. Daily hospital rounds for patient care.
2. Wednesday lunch clinical conference weekly.
3. Tumor Clinic — every Wednesday at 1:30 p.m.
4. Friday lunch clinical conference once a month.

5. Monthly meetings of each clinical department.
6. A fall and spring postgraduate program of approximately 15 hours each.
7. Arrangements can be made for the student to attend departmental meetings, and medical staff committee meetings. This means he may have the opportunity to observe the internal activities of the Hospital Medical Staff.
8. Television — NCME tapes — University of Virginia Medical Grand Rounds Tapes.

APPENDIX 12

Committee Report on Continuing Education and Educational Aids.

Sub-Committee Report on Continuing Education and Educational Aids
Medical Facilities Commission

Members:

Robert T. Manning, M.D.
Eastern Virginia Medical School

Pinson Neal, M.D.
Medical College of Virginia

James Craig, M.D.
University of Virginia

Jason E. Mcclellan, M.D.
Newport News, Virginia

Harold Haley, M.D.
University of Virginia, Roanoke

Russell Davis, Jr., M.D.
Radford, Virginia

Physicians are the direct consumers of continuing medical education while the public is the ultimate beneficiary *if* such a program improves physician performance and standards of health care.

The medical schools, state agencies and professional societies possess the institutional resources to respond to the desires and needs of the physician-consumer.

The legislature possesses the fiscal and empowering authority to provide for implementation of such a program. The people, through the executive and legislative, have a right to demand accountability that their personal and collective health care has been enhanced by such a program.

Physician education is a lifetime continuum beginning with the pre-professional college curriculum through the undergraduate M.D. and graduate professional programs and continuing throughout the physician's professional lifetime. The responsible entities are the physician himself and the supporting consortium of academic and professional institutions.

Learning is a process of behavioral change in the learner and should occur by design and not by chance. The design of a program of continuing learning for practicing physicians requires (1) active participation of the physician-learner in the design process; (2) an institutional instructional base; (3) available, committed experts in subject matter and in educational technology and (4) a system of accountability. Aggregation of the resources to design, implement and evaluate such a program requires individual, institutional and governmental participation.

The physician should be approached in his own locale through either direct, personal contact or collectively through his hospital staff or local medical society. His input provides the data base for:

1) Subject areas relevant to his practice
2) Subject areas relevant to his personal desires
3) Type of education methodology he believes best for him
4) Time commitments he can make
5) Location of program presentation
6) Financial commitment

The institutional base provides an appropriate resource for some types of programs dealing with:

1) Large audiences
2) Special audiovisual requirements e.g., cardiac auscultation
3) Direct patient observation
4) The physician's need to "get away" from his own locale, office and telephone
5) Intensive, special courses requiring an aggregation of extra-mural specialists
6) Special attribute of extra-mural experts

The institutional base also frequently provides resources that are valuable for some kinds of continuing education, such as:

1) Computer aided learning
2) Interactive television
3) Telephone conferences
4) Audio-visual tapes
5) Self-instructional packages

Self-instructional packages are of particular interest to the Virginia physicians since all three medical schools participate in the Southern Deans' Consortium Self-instructional Package Project. This program has led in the development of self-instructional materials throughout the country and is currently in its third year of operation. The availability of self-instructional packages through the three medical schools to all physicians is an additional means by which continuing education on a need basis can be implemented at minimal cost.

The pool of content and educational experts exist in the three medical schools and practicing communities of the state. Commitment of them as individuals and collectively to the responsibilities of continuing education requires careful planning, communication and guidance so that the programs created from the physician and institutional base is relevant, timely, appropriate to the audience, clearly presented, and learner, not teacher, oriented. The faculty must perceive their function as partners in learning and as solver of learner problems, not merely as presentors of content.

A system of accountability is the final element in the organizational process. The accountability should be for the purposes of:

1) Did the program meet the needs of the participants?
2) Did the participants learn?
3) Did the learning that occurred influence the professional practice of the participants to the benefit of their patients?

Questionnaires may be utilized for some anecdotal and individualized evaluation. They are, however, not effective in testing whether or not learning and resultant behavioral change did or did not occur. Before and after tests are unlikely to be accepted by participants unless they are confidential and not used for any individual evaluation. The effect of continuing education on the standards of the professional is the most difficult area in which to assess effectiveness. Until the advent of PSRO evaluation of standards of care or the establishment of relicensure requirements, it is unlikely that this crucial element can be made accountable except in a most tentative, explorative manner. As with the beginning individual data base collection, the accountability system requires active, continuing, intensive participation by the individual physician and his professional organization.

Hypothetical Pilot Study Outline — A

Target Area — Rural physicians practicing without a local hospital.

Assumptions — Geographically scattered, little interpersonal professional communication; very difficult to get away from practice and leave patients with adequate care. Approximately 1-20 physicians in area.

Area Needs— Education and peer communication and better patient care.

Procedure— 1) *Determine need*

A. Felt
B. Individual physician profile
C. Medical audit

2) *Delivery*

A. Instant telephone consultation
B. Telephone tapes
C. Available audio and video tapes
D. Return to medical school for independent study, 1-4 weeks — medical school provides coverage of practice.
E. Telephone conferences
F. VAMIS
G. Network to increase communication among local physicians and nearby hospitals
H. Computer data retrieval to define needs and evaluate program
I. Available self-instructional packages

Duration— One to three years

Evaluation— 1) Attitudes — willingness to pay
2) Use — a) monitor use of modalities
b) pre and post test (i.e. medical audit)
3) Cost effectiveness
4) Assessment at end of study by Directors of Continuing Medical Education and physicians involved.
5) Consumers — Do they think service is better; is compliance better?

Outcome— Aspects of study recommended for statewide use.

Hypothetical Pilot Study Outline — B

Target Area — Community hospital and staff without house staff and residents and little if any subspecialty representation.

Assumptions — Usually pretty well isolated, staff of 15-40 and very busy providing coverage of hospital.

Area Needs— Education and better patient care.

Procedure— 1) *Determine needs*

A. Felt
B. Medical audit (required by JCAH)

2) *Delivery*

A. Circuit course
B. Telephone tapes
C. Instant telephone consultation
D. Telephone conferences
E. Available audio and video tapes
F. Indepth consultant visits
G. Short term residency at medical center (We do not provide coverage)

Duration— One year

Evaluation— 1) Attitudes — willingness to pay.
2) Use — a) monitor use of modalities
b) pre and post test (i.e. medical audit)
3) Cost effectiveness
4) Assessment at end of study by Directors of Continuing Medical Education and physicians involved.
5) Consumers — Do they think service is better; is compliance better?

Outcome— Aspects of study recommended for statewide use.

Hypothetical Pilot Study Outline — C

Target Area — Hospital staff, no house staff, most subspecialties.

Assumptions — Probably staff of 50-200, usually excellent secondary care and shortage of primary care physicians.

Area Needs — Sophisticated education at subspecialty level and education at primary level.

Procedure— 1) *Determine needs*

A. Medical audit
B. Subspecialty self assessment
C. Felt

2) *Delivery*

Various educational interventions devised to meet needs of the three sets of physicians found in this setting: primary physicians functioning as such, specialists functioning in their occasional role as primary physicians, and specialists functioning as specialists.

Duration— Two to three years

Evaluation— 1) Attitudes — willingness to pay
2) Use — a) monitor use of modalities
b) pre and post test (i.e. medical audit)
3) Cost effectiveness
4) Assessment at end of study by Directors of Continuing Medical Education and physicians involved
5) Consumers — Do they think service is better; is compliance better?

Outcome— Aspects of study recommended for statewide use.

Hypothetical Pilot Study Outline — D

Target Area — Hospital with medical school affiliation, house staff and/or students.

Assumptions — Very sophisticated, already close association with medical schools.

Area Needs — Close professional relationship with medical center, help in overcoming depersonalization associated with large medical centers.

Procedure— 1) *Determine need*

A. Medical audit
B. Attitude survey

2) *Delivery*

A. Computer aided learning
B. Interactive television
C. Telephone conferences
D. Faculty visitation
E. Available audio and video tapes
F. Self-instructional learning centers

Duration— Two to three years

Evaluation— 1) Attitudes — willingness to pay
2) Use — a) monitor use of modalities
b) pre and post test (i.e. medical audit)
3) Cost effectiveness
4) Assessment at end of study by Directors of Continuing Medical Education and physicians involved
5) Consumers — Do they think service is better; is compliance better?

Outcome— Aspects of study recommended for statewide use.

Recommendations

1. A conjoint committee be established between the Medical Society of Virginia, the three Medical Schools, the Virginia Council of Higher Education, the State Board of Medical Examiners, the State Board of Health, and other professional societies to:

a) coordinate statewide planning and implementation of continuing education for physicians;

b) recommend to the Legislature and to its constituency through appropriate channels on matters of fiscal and legislative support in areas of program development, implementation and accountability.

2. The three Medical Schools develop a coordinated regional plan for continuing education to meet institutional responsibilities.

3. The direct cost of any program developed should be paid for by the physician recipients and/or their societies. Indirect costs should be borne by legislative appropriations to the institutions as recommended by the conjoint committee to the Legislature.

APPENDIX 13

Recommended Legislation.

A BILL

To appropriate certain funds to the Council on Higher Education for the purpose of continuing the Health Manpower Study.

Be it enacted by the General Assembly of Virginia:

1. § 1. There is hereby appropriated from the general fund of the State treasury the sum of one hundred four thousand, nine hundred sixty dollars to the Council on Higher Education for the biennium 1974-1976 for the purpose of continuing the Health Manpower Study.

A BILL

To create a Health Affairs Information and Data Center; its Director; its powers and duties; cooperation of other State agencies; to create a Health Affairs Commission; appropriation therefor.

Be it enacted by the General Assembly of Virginia:

1. § 1. There is hereby created a Health Affairs Information and Data Center, which shall be under the supervision and direction of the Governor, acting through the Secretary of Human Resources, and shall be referred to hereinafter as the Center. The Governor shall appoint a Director of the Center, who shall hold his position at the pleasure of the Governor and shall be paid such compensation as the Governor may fix.

The Governor shall appoint a Health Affairs Commission, hereinafter, referred to as the Commission, consisting of eighteen members. The Commission shall consist of eighteen members, two to be appointed by the Privileges and Elections Committee of the Senate from the membership thereof, five to be appointed by the Rules Committee of the House of Delegates from the membership thereof, four to be appointed by the Governor from the State at large, the Director of the Council of Higher Education, the Dean of the School of Medicine of the Medical College of Virginia, Health Sciences Division, Virginia Commonwealth University, the Dean of the School of Medicine at the University of Virginia, the Dean of the Eastern Virginia Medical School, the Vice President for Health Sciences from the University of Virginia, the Vice President for Health Sciences from Virginia Commonwealth University and the President of the Norfolk Area Medical Center Authority. The members of the Commission shall receive no compensation but shall be reimbursed for their necessary expenses incurred in the performance of the duties of the Commission.

§ 2. The Center shall have the following responsibilities:

(a) to provide information to State agencies, the General Assembly and the general public on existing programs for health education and services;

(b) to collect data on health education, health manpower and other health matters from all available sources in the Commonwealth; and

(c) to set up a functional and viable data system for health affairs.

§ 3. The Director, under the supervision and control of the Governor acting through the Secretary of Human Resources, shall be charged with the executive and administrative responsibility for carrying out the responsibilities imposed upon the Center by § 2 of this act. The Director shall make a report annually to the Governor on the activities of the Center.

The Director is authorized to employ such personnel, and to contract for such consulting services as he may require to carry out the purposes of this act. Personnel employed by the Director shall be subject to the provisions of Chapter 10 of Title 2.1 (§ 2.1-110 et seq) of the Code of Virginia.

§ 4. The Center shall have the following powers:

(1) to make and enter into all contracts and agreements necessary or incidental to the performance of its responsibilities under this act;

(2) to apply for and accept grants from the United States government and agencies and instrumentalities thereof and from any other source in carrying out the purposes of this act;

(3) to accept gifts, bequests, and any other thing to be used for carrying out the purposes of this act; and

(4) to perform such other acts as may be necessary or convenient for the effective performance of its duties.

§ 5. All State and regional agencies shall provide data concerning health affairs to the Center upon request.

Each State and regional agency involved in health affairs shall designate one person to act as an information officer to provide requested data to the Center.

§ 6. Any organization or association may provide data to the Center concerning health affairs and, to that end, may also appoint an information officer to act as a liaison between the organization or association and the Center.

§ 7. The Commission shall act in an advisory capacity in the establishment of the Health Affairs Information and Data Center and shall assist in the formulation of methods to best utilize the data obtained and recorded. The Commission shall evaluate the effectiveness of the Center and report its findings annually to the Governor.

2. For the purposes of carrying out this act, there is hereby appropriated a sum sufficient.

3. This Act shall be effective until July one, nineteen hundred seventy-seven unless it shall be reenacted by the General Assembly of Virginia prior to that date.